

Landscape Trees for Ohio



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INTRODUCTION

This publication is intended primarily as an introduction and general guide for those who have an interest in trees for landscape or ornamental purposes. There are hundreds of species and cultivars of trees that can be grown in Ohio; however, the 350 included here are among the most important for landscape purposes. More detailed information concerning the trees mentioned and those omitted is available in numerous text books, many of which are available in local libraries.

Size Classification—Although certain trees such as *Acer rubrum* are categorized as medium in height, the mature heights may be smaller or larger than listed due to cultivar variations or the influence of specific environmental conditions. The intent of size classification is for a quick point of reference and general guide.

Hardiness—All the trees mentioned in the text are hardy in Ohio during normal winter temperature conditions; therefore, no mention is made of hardiness zones.

Scientific Names—Scientific names have been stressed to avoid the confusion of common names, which are not standardized and vary from area to area. Unscrupulous advertisers often take advantage of common names and offer plants such as red leaved maples with colored illustrations or dishonest descriptions implying either *Acer platanoides* "Crimson King" or *Acer palmatum atropurpureum* and sell seedling grown *Acer rubrum*.

Cultivars—Beneath the description of some trees, often a listing of cultivars (cultivated variety) of that species is found. These cultivars, when compared to the species, are usually an improvement in either growth habit, flowering, fruiting or foliage characteristics. The cultivars are newer selections and sometimes more difficult to locate but nevertheless worth pursuing. A few key words suggest the advantages of the cultivar. Occasionally, the listing will read cultivars and other species, in which case the additional species are acceptable trees but not readily available in the trade.

Nursery Grown—Trees should be purchased which have been nursery grown. Collected trees frequently have (1) poorer root systems, (2) unsatisfactory shape, (3) greater incidence of narrow angled branches and insect and disease infestation, and (4) a shorter life expectancy.

Availability—No one retail nursery or garden center can be expected to offer for sale the entire list of trees in this bulletin. However, the overwhelming majority of the trees mentioned can be ordered in season from producer nurseries throughout Ohio and the northern United States. Some excellent trees are discussed in the bulletin, but for one reason or another (often propagation or transplanting difficulties), they are not generally offered. These unavailable trees are noted as being uncommon in the trade; however, the enthusiastic gardener will watch the nursery catalogues and order a Paperbark Maple, Umbrella Pine, or other uncommon plant when they are listed.

Planting—Most of the trees listed are tolerant of a wide range of growing conditions. Landscape trees, like most other plants, require reasonably good soil that is well drained. More ornamentals die from excessive moisture in the root zone than from all other causes combined.

Drainage—To avoid wet areas, (1) select the highest sites on the property for planting, (2) plant the trees higher than they were growing in the nursery (this may mean the top of the soil ball will be above ground level), (3) consider raised beds (the height of a railroad tie or more), and (4) in certain instances the installation of drainage tile around trees may be needed to dispose of the water.

Backfill—The backfill around most trees should be a mixture of soil and peat moss, or other organic material such as compost to dilute the soil.

Watering—Thorough watering at planting and as needed thereafter is advisable, particularly for the first year which is the important time for establishment. Leave a saucer shaped depression around the tree to facilitate later watering. Do not expect newly planted trees to grow extensively the first year or two after planting.

Fertilizer—Incorporate fertilizer into the backfill at the time of planting, particularly the element phosphorus. Add fertilizers such as 0-20-0, 4-12-4, 5-10-5 or similar high phosphorus analysis at the rate of one measuring cup ($\frac{1}{2}$ pint) per bushel of soil. Nitrogen and potassium will be needed thereafter on a regular basis according to soil test recommendations. Soil test

forms and containers are available from local County Cooperative Extension Service offices.

Pruning—Pruning at the time of planting is necessary in most all cases. Although broken and damaged roots of bare root trees must be pruned, the most important aspect is top pruning. To increase the rate of survival and reduce the extent of natural dieback, most trees should be pruned to account for root loss at the time of digging. Normally $\frac{1}{4}$ - $\frac{1}{3}$ or more of the branch area should be removed back to a side branch or bud. Although pruning will reduce the overall size of the tree, if properly done, it will not affect the shape as many people fear. Proper moisture control and pruning are the two most important aspects to consider when transplanting trees.

Maintenance—Numerous pests are mentioned in the text and most can be controlled with pesticides at the first indication of their presence. For information con-

cerning pest identification and pesticide selection, contact a knowledgeable arborist, nurseryman, garden center operator or the County Cooperative Extension Service Agricultural Agent. In addition to regular watering, mulching and fertilizing, wire or plastic attached labels and plastic twine used in burlapping must be removed. Wrapping of the trunk of newly planted trees helps to prevent damage from sun scald. Trees over one inch in diameter may need staking or guying to hold the plant in an upright position and prevent roots from becoming loose or damaged.

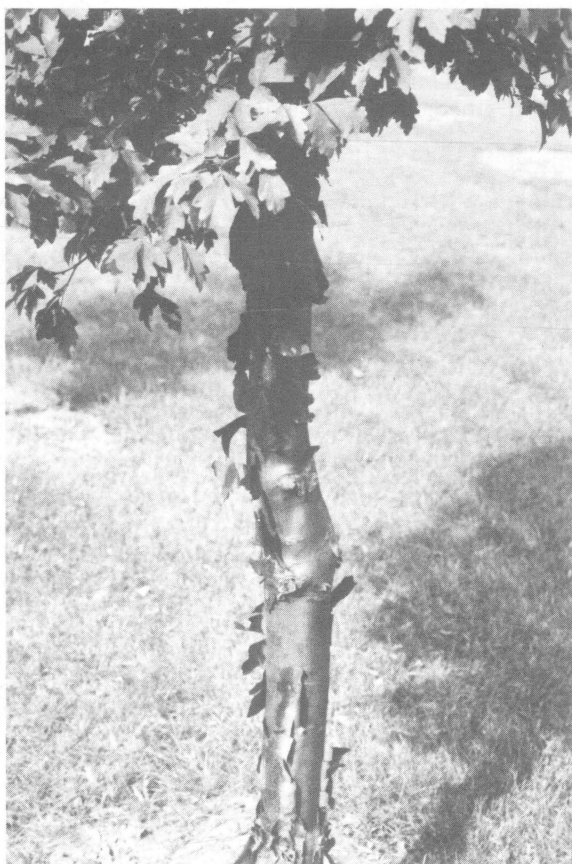
More information on planting and maintenance is available from Ohio Cooperative Extension Service Publications titled, Planting Trees And Shrubs, Pruning Landscape Plants, Insect And Mite Control On Ornamentals, and Disease Control In The Home Yard. All these publications are available from County Cooperative Extension Service offices.

DECIDUOUS TREES

SMALL TREES— LESS THAN 30 FEET IN HEIGHT

Acer buergerianum 20-25' Trident Maple

Trident Maple is round in habit with small, glossy foliage turning yellow to orange-red in autumn. It is readily transplanted and drought resistant. Use in the



Paperbark Maple

landscape as a street tree, small lawn tree or in group plantings.

Acer campestre 25-30' Hedge Maple

Hedge Maple is slow growing, dense, rounded in habit with yellow fall color. This tree is transplanted with ease. The only serious pest is leaf hopper. Plant in lawn areas as a street tree, screen, or large hedge.

Acer ginnala 18-20' Amur Maple

A shrubby, vase shaped maple, Amur Maple is outstanding in late summer with red, winged fruit and dark green leaves. The foliage later turns an excellent scarlet. Use in corner plantings, next to walls, under utility wires, in mass plantings or as a specimen.

Acer griseum 20-25' Paperbark Maple

Paperbark Maple is an open, rounded tree distinguished by orange fall foliage and cinnamon-brown bark, which peels in long strips on older branches and the trunk. An excellent specimen tree, especially in autumn and winter but only occasionally available in the trade due to difficulties in propagating.

Acer palmatum 8-20' Japanese Maple

Japanese Maple is small, rounded maple with cultivars of varying shapes and sizes. The foliage of the cultivars ranges in color from green through yellow, pink, red, and various combinations. Plant in soil with sufficient moisture to reduce leaf scorch. Some cultivars in exposed sites are damaged in winter. Use as a specimen, in containers, in Oriental gardens, and near structures for protection.

Cultivars

A. p. 'Atropurpureum' Bloodleaf Japanese Maple. Red foliage all summer, hardy.

A. p. 'Burgundy Lace' Burgundy Lace Japanese Maple.

Cut-leaved form with red foliage.

A. p. 'Dissectum' Threadleaf Japanese Maple. Deep red foliage, deeply cut with pendant branches.

Acer tataricum 15-20' **Tatarian Maple**

Tatarian Maple is a slow growing, drought tolerant, upright spreading tree. The dark green leaves, 2-4 inches long, turn orange to orange red in autumn. The red seed pods from mid-June to mid-July are very colorful. Tatarian Maple has landscape value as a street tree, screen, specimen, or in mass plantings.

Aesculus pavia 18-20' **Red Buckeye**

The outstanding feature of Red Buckeye is the 6-10 inch panicles of bright red flowers in early June. The bark is smooth and gray with tan buds. This tree grows well in average soil and has no serious pest problems. Plant where red color is needed in June, as a specimen, in groups, or in foundation plantings of large buildings.

Amelanchier species 25-40' **Serviceberry**

Sold as Serviceberry, Shadblow, or Juneberry, Serviceberry is an excellent small tree in spring, fall and winter. The bloom, in April, in billowy white masses is followed by edible blue fruit in early summer. The fruit is occasionally processed and sold as Juneberry jelly; however, the birds usually eat most of the fruit. The foliage is brilliant yellow and red in autumn. The gray bark is striped, and smooth. Use near woodlands, ponds, in groups or masses or close to large buildings.

Species

- A. canadensis.....Downy Serviceberry. The tallest of the species, grayish young foliage.
- A. grandiflora.....Apple Serviceberry. The smallest of the three species with the largest flowers.
- A. laevis.....Allegheny Serviceberry. Native throughout the eastern United States, including Ohio.

Carpinus betulus 15-18' **Upright 'Fastigiata' European Hornbeam**

An upright tree when young, Upright European Hornbeam eventually becomes oval with a broad base. It does well in a wide range of soils, in sun or shade, and is pest free. It should be moved B & B (Balled and Burlapped). Popular in Europe, this is one of the best small trees for a screen, large hedge or foundation plant for large buildings. It's being planted extensively in malls, planters, and shopping plazas due to its formal habit.

Other Cultivar

- C. b. 'Columnaris'....Columnar European Hornbeam. A narrow columnar form.

Cercidiphyllum japonicum 25-30' **Katsuratree**

A narrow tree when young, Katsuratree becomes wide spreading at maturity. This fine textured tree is grown with single or multiple stems. The round leaves become yellow to orange in autumn. Katsuratree is difficult to transplant, slow to reestablish, pest free, and thrives in moist soils. Use as a small lawn tree, near large buildings, or as a suburban street tree.

Cercis canadensis 25-30' **Eastern Redbud**

Redbud is best known for its pink (with a tinge of purple) pea-like flowers, lasting for 3 weeks in April. It has a round spreading habit of growth. The trunk of older trees is colorful as orange inner bark becomes visible. It will grow in sun or shade, alkaline or acid

soils, and in moist soils. Dieback of branches is a serious problem that requires pruning. Eastern Redbud can be effectively used in naturalized mass plantings in parks or large areas as well as a specimen lawn tree.

Cultivars

- C. c. 'Alba'.....White Redbud. White flowers.
- C. c. 'Oklahoma'.....Oklahoma Redbud. Dark green glossy leaves.
- C. c. 'Withers Pink Charm'.....Withers Pink Charm Redbud. Pink flowers with no purple coloration.

Cornus alternifolia 20-25' **Pagoda Dogwood**

This Dogwood is one of only two with alternate leaves and is distinguished by cream colored clusters of flowers in May, followed by black fruit on red stems. The tree is spreading and horizontal in habit. It prefers moist soils, withstands partial shade, and has no serious pests. Use near wooded areas, ponds or in naturalized sites.

Cornus florida 20-35' **Flowering Dogwood**

A small tree, Flowering Dogwood varies in height, depending on site, with a spreading horizontal habit of growth. The white blooms in early May, excellent red fall color in early September, and good red fruit in autumn distinguish this species. Transplant B & B in acid, well drained but moist soils. It's not recommended for alkaline, poorly drained soils of central and western Ohio. Borers and canker are troublesome. In Eastern Ohio, use for suburban streets, parks, foundation plantings or for specimens.

Cultivars

- C. f. 'Abundance'.....Similar to or the same as Cloud Nine.
- C. f. 'Apple Blossom'....Light pink flowers shading to white in center.
- C. f. 'Cherokee Chief' PP 1710.....Deep red bracts.
- C. f. 'Cherokee Princess'.....Light pink bracts.
- C. f. 'Cloud Nine' PP 2112....Slow growing with abundance of white flowers.
- C. f. 'First Lady'.....Variegated, creamy white and green foliage.
- C. f. 'Fragrant Cloud'....Profuse white bloom similar to Cloud Nine.
- C. f. 'Rainbow' PP 2743....Variegated yellow, green, and pink foliage, red in fall.
- C. f. 'Spring Song'.....Bracts a deep rose red.
- C. f. 'Sweetwater Red'.....Deep red bloom.
- C. f. 'Welch'.....Variegated, white, pink and green foliage, pink in fall.
- C. f. 'Welch Junior Miss'....Pink flowers with white margined tip.
- C. f. 'White Cloud'....Probably same as Cloud Nine.
- C. f. flora pena.....Double white flowers.
- C. f. nuttali 'Eddie's White Wonder'..Large white flowers, deep red fall foliage.
- C. f. pendula.....Weeping form with white flowers.

Cornus kousa chinensis 20' **Chinese Kousa Dogwood**

A small tree or upright shrub, Chinese Kousa Dogwood has narrow leaves more pointed than C. florida. The



Russian Olive

white bracts are also pointed. Flowers, borne in mid-June, are followed by raspberry-like fruit in late summer which are quite showy. This tree grows best in well drained, acid soils. Use near large buildings, on residential properties or as a specimen tree or shrub.

Cultivar

C. k. 'Milky Way' Milky Way Kousa Dogwood.
Profuse flowering habit.

Cornus mas 20-25' **Corneliancherry Dogwood**

This dogwood is grown both as a dense shrub or small tree. The bark is shreddy and cinnamon colored. Small yellow flowers are borne in mid-March and the following cherry-like fruit are a favorite of wild life. This tree is tolerant of moist soils, partial shade, and has no serious pests. The landscape use is limited to borders, screens, specimen or large area mass plantings.

Crataegus crusgalli 18-20' **Cockspur Hawthorn**

This hawthorn is characterized by glossy leaves, dense twiggy growth, long sturdy thorns, horizontal branching habit and a flat top. The white flowers in mid-May are followed by 1/3 inch red fruit, effective from October through December, and are a favorite of birds. Adaptable to a wide range of soils but should be moved B & B. Use as a screen, hedge, small shade tree or as a specimen in the landscape.

Crataegus lavalleyi 20-25' **Lavalle Hawthorn**

Somewhat narrow and irregular in habit for several years, this species becomes rounded with age. The twigs are green to tan colored with relatively few thorns. Leaves are a dark, glossy green and hold late into autumn. The flowers are creamy white in mid-May, followed by outstanding large 1/2-3/4 inch orange-red fruit persisting from October throughout the winter. Adaptable to general soil conditions with no major pest problems. Used in the landscape as a street tree, specimen, and near small homes.

Crataegus monogyna 25' **Pyramidal Singleseed Hawthorn**

A dense, columnar form with single white flowers in May followed by small red fruit. The only pest is occasional fireblight. Plant as a screen in areas where a narrow upright habit is needed or for accent in the landscape.

Crataegus phaenopyrum 25-30' **Washington Hawthorn**

A popular Hawthorn due to small, bright, glossy green foliage that turns a good red in autumn. The flowers are abundant in mid-May for 7 to 10 days with masses of orange-red fruit from mid-October until late winter. This tree is easy to transplant in most soil conditions with aphids and rust the only common pests. Used extensively by landscapers for street plantings, around small residences, for hedges, screens, and as a source of food for birds.

Crataegus viridis 25' **Winter King Hawthorn**

A rounded tree similar to Washington Hawthorn with silver-colored bark and fewer thorns, Winter King begins fruiting while young and retains its 3/8 inch red fruit throughout the winter, unless birds are short of food sources. The many uses in the landscape are the same as for Washington Hawthorn.

Elaeagnus angustifolia 20-25' **Russian Olive**

Russian Olive is a fast growing tree with usually a crooked or twisted trunk, silvery young branches, and dull green foliage with a silver color beneath. Valued as an ornamental for its foliage, it has resistance to road salt and adaptability to poor soils. It is relatively short lived, with many dead twigs as a result of continual dieback. Its landscape value is limited to areas where silver gray color is needed or where poor soil conditions exist such as along highways.

Halesia carolina 20-30' **Carolina Silverbell**

This tree is most effective in late April to early May with small, bell shaped, white flowers borne along the twigs. The shredding bark is effective during winter. This species thrives in a wide range of soil conditions, is pest free, and will withstand partial shade. Plant near dark colored buildings to give contrast to the white flowers. Carolina Silverbell is an excellent tree that should be used more in home landscaping.

Species

H. monticola Mountain Silverbell.
A taller species with larger flowers and foliage but not as readily available.



Panicle Goldenrain tree

Koelreuteria **Panicled**
paniculata **25-30'** **Goldenraintree**

Bright yellow flowers in pyramidal clusters during mid-to late-July distinguish this rounded tree, which is broader than high. Brown pods remain on the tree through the winter and add to the interesting coarse winter character. This species is tolerant of city conditions, dry soils, and is relatively pest free. Transplant in spring into well drained soil. Use as a specimen in a park, or in city plantings where drainage is satisfactory.

Cultivars

K. p. 'Fastigiata' Fastigate Goldenraintree.
 Narrow, upright form.

K. p. 'September Goldenrain' September Goldenraintree.

Blooms in late August and September.

Laburnum watereri **12-15'** **Waterer Laburnum**

This tree is small or occasional shrub with an outstanding feature of long, drooping, pea-like yellow flower clusters in May lasting for 10 days. Move with a ball of soil and plant in a well drained site. Laburnum may be subject to stem dieback when the temperature drops below -12° F. Plant in protected sites such as an eastern exposure, near buildings, or in a courtyard.

Magnolia **Purple**
liliflora 'Nigra' **10-12'** **Lily Magnolia**

The flowers of this shrubby, often multiple stemmed tree, are purple, bell shaped in mid-May. Transplant in spring with a ball of soil. Use as a specimen, near large buildings, or in areas where the dark blooms and winter character may be enjoyed.

Magnolia loebneri **Merrill**
 'Merrill' **20'** **Magnolia**

This hybrid magnolia blooms in April before the foliage appears and is distinguished with many white petals. The tree is symmetrical and vigorous in growth. Like most magnolias, it should be moved B & B and preferably in spring. Use as a specimen or as a lawn tree.

Magnolia soulangeana **25-30'** **Saucer Magnolia**

This upright spreading shrub or small, rounded tree has large 5 to 10 inch saucer shape blooms. The flowers, occasionally damaged by frost during late April to early May, are white at the tips of the petals shading to red or purple at the base. Transplant in spring into well drained soil. Soft shell scale can be a problem. Use as a street tree where there is a wide tree lawn, as a specimen tree, or near large buildings.

Cultivars

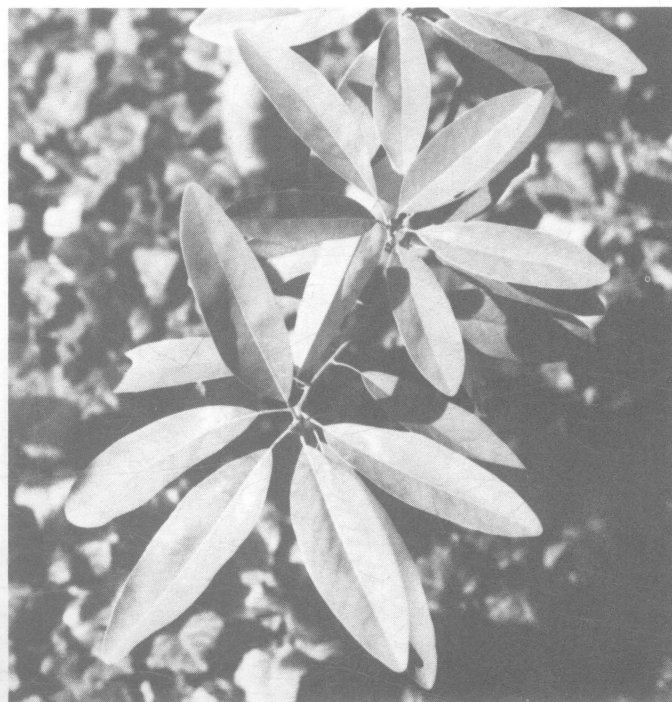
M. s. 'Alexandrina' Alexandrina Saucer Magnolia.
 Flowers rose purple outside and pure white inside. Large flowering and early blooming.

M. s. 'Amabilis' White Saucer Magnolia.
 Ivory white blooms.

M. s. 'Lennei' Lenne Saucer Magnolia.
 Dark, purplish-magenta flowers borne 7 to 10 days later than the species.

Magnolia stellata **10-12'** **Star Magnolia**

A shrub or small tree which has many petaled star-shaped white flowers in early April. The large, hairy, flower buds and attractive gray bark add interesting



Sweetbay Magnolia

winter character. Plant in spring, B & B, in well drained soil. Soft shell scale can be controlled with insecticides. An excellent landscape plant for corner or entrance plantings to buildings or as a specimen.

Cultivars

M. s. 'Waterlily' Waterlily Star Magnolia.
 Pink buds, larger white flowers, with more petals.

M. s. 'Pink Star' Pink Star Magnolia.
 Pink flower buds which fade to white upon full bloom.

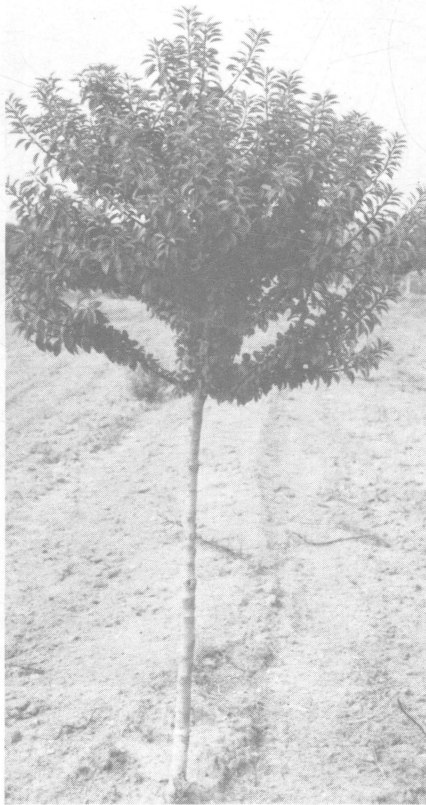
M. s. 'Royal Star' Royal Star Magnolia.
 Large white flowers which bloom later than the species and thus reduce damage from late freezes.

Magnolia virginiana **25-35'** **Sweetbay Magnolia**

This magnolia has a loose, open, upright spreading habit. The cream colored flowers open in late May, early June and sporadically throughout the summer. The twigs, especially the new growth, are green all year. A good plant for soils that tend to be moist or for partially shaded sites. Plant against a darker background, to highlight the white flowers. The informal character and interesting branching habit merit increased use of this magnolia.

Malus species **6-30'** **Flowering Crabapple**

The Flowering Crabapples, as a group, vary in size with the majority between 15 and 25 feet. Flowering Crabapples are valued for their flowers, fruit, and habit of growth. The single to double blooms range in color from white, pink, red to purple from early April through early May. The fruits which can be used for jelly are green, yellow, red, or purple and from 3/8 to 1 inch in diameter. Fruits are effective from August through winter, depending on the species or cultivar. The habit of growth varies from columnar to broad spreading to weeping. Plant in well drained soil during spring or fall. The major pest is apple scab, which may cause defoliation



Coralburst Flowering Crabapple

during the summer. Although fungicides can be used to control apple scab, resistant species and cultivars are recommended. (See list of resistant types.) Fireblight and cedar apple rust, as well as aphids, are other pests of minor concern. Plant as a specimen, street tree, near homes or large buildings, as a lawn tree or in parks. Flowering Crabapples are one of the best small trees, due to the outstanding features all year.

Species and Cultivars

Hundreds of Flowering Crabapples can be found in the trade; however, the following have all proven to be resistant or highly resistant to apple scab in Ohio during the past several years.

<i>M. atrosanguinea</i> (Carmine)	15'
Wide spreading, single carmine flowers, small reddish and sparse fruit.	
<i>M. baccata</i> 'Jacki'	30'
Columnar, single, white flowers, small bright red fruit.	
<i>M. baccata</i> 'Mandshurica'	25'
Rounded, fragrant, white single flowers; the earliest blooming cultivar.	
<i>M. 'Beverly'</i>	20'
Globe shape, pure white flowers, red, persistent fruit.	
<i>M. 'Bob White'</i>	20'
Globe shape, white flowers, yellow persistent fruit.	
<i>M. 'Coralburst'</i> PP 2983	8'
Dwarf, oval, double, rose-pink flowers, few fruits.	
<i>M. 'Evelyn'</i>	20'
Oval, single pink flowers, large red fruit; good autumn foliage.	

<i>M. floribunda</i> (Japanese)	30'
Arching, spreading, pink to white in flower, fruit small, red-yellow.	
<i>M. 'Golden Hornet'</i>	20'
Rounded in habit, flowers single, white with large, yellow fruit.	
<i>M. halliana</i> 'Parkmani'	15'
Vase shape, double pink flowers, red fruit.	
<i>M. 'Hillier'</i>	12'
Rounded, flowers single and semi-double, bright pink with yellow to orange fruit.	
<i>M. hupehensis</i> (Tea)	25'
Broad, vase shape, single, pink to white flowers, yellowish and red fruit.	
<i>M. 'Indian Magic'</i>	15'
Rounded, rose-red flowers, yellow fruit.	
<i>M. 'Kibele'</i>	8'
Compact, spreading, medium size with purplish-red foliage, pink flowers.	
<i>M. 'Liset'</i>	12'
Rounded, single flowers rose red to light crimson, fruit—maroon red.	
<i>M. 'Mary Potter'</i>	15'
Rounded, single, pink to white flowers, small, red fruit.	
<i>M. ioensis</i> 'Prairie Rose'	15'
Rounded, double, pink flowers, few fruits.	
<i>M. 'Prince Georges'</i>	25'
Pyramidal, double (55-60) petals, deep to light pink flowers, no fruit.	
<i>M. 'Red Jade'</i> PP 1497	15'
Weeping, single white flowers, small, brilliant red fruit.	
<i>M. 'Red Jewel'</i> PP 3267	15'
Horizontal branching, single white flowers, small, persistent red fruit.	
<i>M. sargentii</i>	8'
Dwarf, 6' in height, spreading, single, white flowers, small persistent red fruit.	
<i>M. sargentii</i> 'Rosea'	8'
As above, flowers pink to white.	
<i>M. 'Snowdrift'</i>	20'
Oval, profuse, single, white flowers, numerous small red fruit.	
<i>M. tschonoskii</i>	18'
Pyramidal, excellent summer and autumn foliage, few flowers or fruits.	
<i>M. 'Van Eseltine'</i>	20'
Narrow, vase shape, double pink flowers, yellow and red fruit.	
<i>M. 'White Angel'</i>	20'
Rounded, flowers single white, profuse, fruit brilliant red, persistent until spring.	
<i>M. 'Wintergold'</i>	20'
Broadly vase shape, abundant white flowers, yellow fruit.	
<i>M. zumi</i> 'Calocarpa'	25'
Rounded, flowers pink to white, abundant small red fruit.	

<i>Oxydendrum</i>		Sorrel Tree
<i>arboreum</i>	20-25'	or Sourwood

This slow growing, oval to pyramidal shaped tree has dense, lustrous, leathery, foliage which turns a brilliant scarlet in autumn. The small, white flowers in pendulous panicles in mid-July are attractive. The mid-summer flowers, excellent autumn color and graceful habit give

this tree interest throughout the year. Plant into well drained, acid soils. Use in eastern Ohio landscapes as a specimen tree, on golf courses, and in residential plantings.

Prunus blireiana 20' **Blireiana Plum**

A small, rounded tree with double pink, fragrant flowers. The foliage opens a rich copper color and retains this color well into the summer. Grows best in moist soils in a wide range of soil types. Pests include borers, canker, and dieback. Plant in a tree lawn, as a specimen, or as a focal point in the landscape.

Prunus cerasifera **Thundercloud** 20-25' **Thundercloud Purple Plum**

The foliage of this tree is deep purple all summer and the flowers are pink in April. The fruits are reddish, 1 inch in diameter, few in number, and not important ornamentally. Plant in sun in most any soil type. Borers, canker, and dieback tend to shorten the expected life by several years. Purple plums are used in the landscape for accent points, specimens, or as small street trees.

Prunus padus **Spaethii** 20-25' **Bigflower European Bird Cherry**

A rounded tree, this plant is characterized by white flower spikes 8 inches in length in early May. Small, ¼ inch, black fruit follow in early summer. Relatively uncommon in the trade. Use as a specimen, in parks, or in a tree lawn.

Prunus serrulata 25' **Oriental Cherry**

More than 50 cultivars of this genus of Flowering Cherry are offered in the nursery trade but not all are reliably hardy in Ohio. In general, they are small trees with outstanding single or double, white or pink flowers in April or early May. Plant in well drained areas and protect against borers and canker. Oriental cherries are used for street trees, in protected areas such as courtyards, and near large buildings.

Cultivars

P. s. 'Amanogawa'Amanogawa Flowering Cherry. Fastigiate, 20', semi-double, light pink flowers.

P. s. 'Fugenzo' (Kofugen)Fugenzo Flowering Cherry.

Large, double, rosy-pink flowers fading to a light pink.

P. s. 'Sekiyama' (Kwanzan)Sekiyama Flowering Cherry.

An upright tree when young, becoming rounded with age; the blooms are double, deep pink and pendulous.

P. s. 'Shirofugen'Shirofugen Flowering Cherry. Large double flowers opening pink but fading to white; foliage bronze initially fading to green.

P. s. 'Shinotae'Mt. Fuji Flowering Cherry. Form similar to Kwanzan with double, white, fragrant flowers with slightly ruffled edges.

Prunus subhirtella **Pendula** 20-25' **Weeping Higan Cherry**

A fast growing, weeping Cherry which has delicate light pink blooms in early April. This species is quite hardy but requires good drainage. It is somewhat more resistant to borers than other species of this genera. This fine textured plant is effectively used where the weeping character is desired, especially near water, in parks, or as a specimen.



Columnar Mountain Ash

Salix caprea 20' **Goat Willow**

This is the Pussy Willow sold in florist shops in spring and often called French Pussy Willow. The principal ornamental feature is the catkins in early spring. Extensive pruning every few years helps to keep the plant vigorous, smaller, and with more attractive catkins. A number of insects and diseases attack willow and spraying is usually necessary for one or more of these pests. Plant in naturalized areas in moist sites; however, willow will grow in dry locations.

Salix matsudana **Tortuosa** 20-30' **Corkscrew or Contorted Willow**

This novelty tree is more often grown as a shrub due to its twisted, contorted branches. The yellowish stems are unique while the foliage is bright green. As with most willows, it will thrive in most any soil type, including moist soils. Use in the landscape as a "conversation piece" where something different can be used.

Cultivar

S. m. 'Tortuosa Aurea Pendula'Golden Curls Corkscrew Willow.

Curly leaves and weeping habit.

Sorbus aucuparia 25-30' **European Mountain Ash**

This tree is upright and rounded when mature but usually quite narrow the first several years after planting. The small leaflets of the compound foliage give a soft, fine texture throughout the growing season. Clusters of white flowers in mid- to late-May are followed by clusters of striking orange fruit that color in late-summer and persist through late-fall. Troublesome pests include borers, fireblight, and occasionally canker, which tend to shorten the life of Mountain Ash. Plant in the landscape near buildings or in front of evergreens to provide a background for the fruit or plant as a specimen.

Cultivars

S. a. 'Cardinal Royal' PP 3114Cardinal European Mountain Ash.

Vigorous upright growth with large clusters of bright red fruit.

S. a. 'Coles Columnar'Columnar European Mountain Ash.

Has narrow columnar habit and uniform bright fruit color.



Japanese Tree Lilac

S. a. 'Fastigiata' Upright European Mountain Ash. Narrow, upright habit of growth.

S. a. 'Pendula' Weeping European Mountain Ash. Weeping form.

Other Species

S. alnifolia Korean Mountain Ash. Leaves simple, flowers large, fruit orange-scarlet.

S. aria White Beam Mountain Ash. Foliage white on underside, scarlet red berries, speckled with brownish dots, soon eaten by birds.

S. quercifolia Oakleaf Mountain Ash. Foliage lobed similar to an oak; fruit red.

Styrax japonicum 15-20' Japanese Snowbell

Introduced from Japan, this wide spreading, graceful, large shrub or small tree has horizontal branches and small dark green leaves. The small, waxy white pendulous flowers in late May to early June make it an outstanding showy specimen at that time. It will withstand partial shade; grows best in moist, slightly acid soils; and is relatively pest free. Plant as a specimen in the landscape or in partially shaded areas.

Syringa amurensis japonica 25-30' Japanese Tree Lilac

The Japanese Tree Lilac is grown as a small tree or large shrub. The large, pyramidal, clusters of feathery white flowers in June are attractive as is the showy, cherry-like bark. This plant does well in alkaline soils and does not have serious problems. Used in mass plantings in parks, near buildings, as a specimen, and as a small street tree.

Ulmus glabra Camperdown Elm
'Camperdowni' 10-12'

This elm is a grafted form with a very formal, flat top, large leaves, and long weeping branches. Selected primarily for its habit of growth, it will grow well in most soils with ample moisture. Use in the landscape as a specimen, in an Oriental garden, or where a pendulous effect is desired.

Viburnum lentago 15-18' Nannyberry Viburnum

This native *Viburnum* is grown as a large shrub or small tree. The white flower clusters in mid-May vary from 3-8 inches in diameter and are followed by blue-black fruit. No serious pests attack this *Viburnum*, which is tolerant to moist soil conditions and partial shade. An excellent plant for naturalizing near wooded areas, public areas, or for screening.

Viburnum sieboldi 18-20' Siebold Viburnum

This rapid growing *Viburnum* is an open, large shrub, or small tree. The leaves may be 8 inches in length, and the white flower clusters in mid-May will vary from 3-6 inches across. The numerous fruits turn from pinkish-red to black in September and contrast well with the supporting red pedicels. Like most *Viburnums*, plant in a location to encourage birds, as they feed on the fruits of most species. Use in shrub borders, parks, or other large areas.

MEDIUM TREES— BETWEEN 30 AND 50 FEET IN HEIGHT

Acer platanoides 40-45' Norway Maple

The dense branches along with large leaves 4-7 inches across make this species an excellent tree for shade. Norway Maple is covered with masses of small yellow flowers in April prior to leaf emergence. The dark green foliage, which can be identified by the milky sap in the petiole, turns yellow in autumn. This maple transplants readily and withstands drought but may occasionally be troubled with *Verticillium Wilt* and girdling roots. Plant where dense shade is desired, in parks, in downtown areas, and along streets where sufficient space is provided for its broad oval spreading habit. Do not attempt to grow turf under Norway Maple, due to the dense shade.

Cultivars

A. p. 'Cavalier' PP 2489 Cavalier Norway Maple. Very compact, roundish, maturing at 35'.

A. p. 'Cleveland' Cleveland Norway Maple. Upright oval, 40-45', widely used as a street tree.

A. p. 'Columnare' Column Norway Maple. An outstanding selection 25-30' with compact, narrow upright form with ascending branches.

A. p. 'Crimson King' Crimson King Norway Maple. Leaves purplish in color throughout the summer.

A. p. 'Emerald Queen' Emerald Queen Norway Maple.

A rapid growing upright type with glossy, green, leathery foliage.

A. p. 'Erectum' Erect Norway Maple. Slow growing, 25-30', with narrow upright habit and short branches.

A. p. 'Faasen's Black' Faasen's Black Norway Maple. Similar to Crimson King.

- A. p. 'Globosum'.....Globe Norway Maple.
Formal globe shape, dense and small, maturing at 15-18'.
A. p. 'Greenlace' PP 2759.....Greenlace Norway
Maple.

Deeply cut, lacelike leaves.

- A. p. 'Jade Glen'.....Jade Glen Norway Maple.
Rapid growth, spreading habit, golden foliage in autumn.

- A. p. 'Olmsted'.....Olmsted Columnar Norway Maple.
A uniform columnar form maturing at 30-35'.

- A. p. 'Royal Red'.....Royal Red Norway Maple.
Similar to Crimson King, relatively new.

- A. p. 'Schwedler'.....Schwedler Norway Maple.
Foliage in spring is purplish red, changing to green in
early summer.

- A. p. 'Summershade' PP 1748..Summershade Norway
Maple.

An upright form to 60-75', rapid in growth with dark,
leathery leaves resistant to windburn.

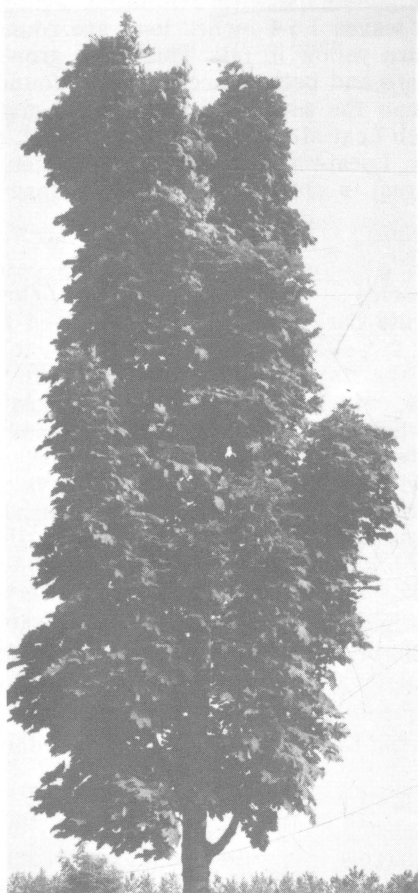
- A. p. 'Superform'.....Superform Norway Maple.
Maturing at 50', this rapid growing cultivar has dark
green foliage.

- A. p. 'Variegatum' (Drummondi)..Silver, Harlequin or
Variegated Norway
Maple.

A slow grower, white leaf margins with new growth
occasionally reverting to all green foliage.

Acer pseudoplatanus 45-50' Sycamore Maple

Known as the Planetree Maple due to its large leaves
which measure 6 inches or more in width. The habit is



Column Norway Maple

round with a coarse texture. The tree is tolerant of
adverse sites but subject to canker injury and because
of this, its life expectancy is shortened. This tree may
become more popular in parks, particularly the cultivars
which have improved foliage color.

Cultivars

- A. p. 'Erectum'.....Erect Sycamore Maple.
Young trees columnar, becoming pyramidal with age.

- A. p. 'Purpureum'.....Purpleleaf Sycamore Maple.
Leaves purple on the underside.

- A. p. 'Spaethi'.....Wineleaf Sycamore Maple.
Round in habit with underside of leaves burgundy col-
ored.

- A. p. 'Tricolor'.....Tricolor Sycamore Maple.
A rare cultivar with green and white coloration in the
top of the leaf with a wine color underneath.

- A. p. 'Worleei'.....Golden Leaved Sycamore Maple.
Leaves yellow to orange-yellow in spring fading to green
during summer.

Acer rubrum

45-50'

Red Maple

Sold occasionally as Swamp Maple, this species is up-
right, oval in form and quite rapid in growth. The
flowers are red and branches gray, both offering effective
seasonal color. The dark green foliage with a silver color
underside turns yellow, orange, or red in fall. This
species will withstand moist soils. Cultivars should be
selected for specific forms and reliable annual red fall
color. An excellent tree for large areas and residential
landscaping, including use on streets, in parks, golf
courses, etc.

Cultivars

- A. r. 'Armstrong'.....Armstrong Red Maple.
A rapid growing, narrow upright cultivar to 35'.

- A. r. 'Autumn Flame' PP 2377.....Autumn Flame
Red Maple.

Maturing at 40' with brilliant scarlet fall color very early
in autumn.

- A. r. 'Bowhall'.....Bowhall Red Maple.
Pyramidal shape to 40' with brilliant fall color.

- A. r. 'Columnare'.....Columnar Red Maple.
More narrow than Armstrong, to 50' with good fall color.

- A. r. 'Doric' PP 2823.....Doric Red Maple.
Mature height 25-30' with a columnar habit and a 6 foot
spread; foliage is dark red in fall.

- A. r. 'Gerling'.....Gerling Red Maple.
A densely branched cultivar to 35' with a pyramidal
habit.

- A. r. 'October Glory' PP 2116.....October Glory
Red Maple.

The leaves turn crimson-red and are retained quite late
into the autumn.

- A. r. 'Red Sunset'.....Red Sunset Red Maple.
Maturing at 45' with excellent red fall color which per-
sists well into fall.

- A. r. 'Scanlon'.....Scanlon Red Maple.
Conical shape to 35' with orange-red fall color.

- A. r. 'Schlesinger'.....Schlesinger Red Maple.
Superior fall color, to 45'.

- A. r. 'Tilford'.....Tilford Red Maple.
Uniform pyramidal shape to 35', as wide as tall.



European Alder

Aesculus carnea
'Brioti'

35'

**Ruby Red
Horsechestnut**

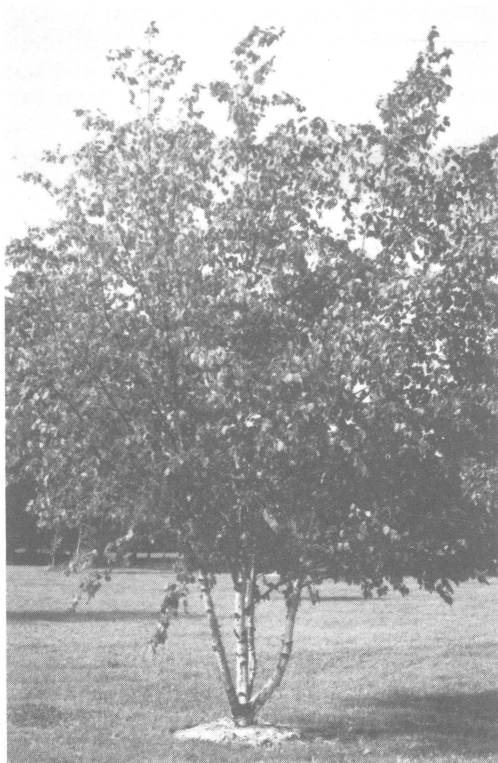
This dense, round, slow growing tree has an outstanding display of red flower clusters in mid-May. The tree has dark green foliage and is practically fruitless. Plant in well drained, but moist soil, to reduce the leaf scorch problems so common to Horsechestnuts. The Ruby Red Horsechestnut is a fine selection for lawn, street, park, or specimen use.

Aesculus glabra

35-45'

Ohio Buckeye

The principal reason this Buckeye is planted in Ohio is because it is the state tree and not due to its ornamental features. The greenish yellow flowers appear in mid-May and are not as showy as most other *Aesculus* types. The fruit with its prickly husks and the foliage



Monarch Birch

which turns brown and drops in mid- to late-summer create maintenance problems. It can be planted in most any soil condition. No pests are serious on this tree. Its landscape value is limited to parks and large areas, but not the residential property.

Alnus glutinosa

40-50'

European Alder

A fast growing, upright tree with irregular habit, and dark, glossy green leaves which turn yellow in autumn. Neither flowers nor fruits are particularly effective. Its outstanding virtue is its ability to thrive in wet soils. Plant in wet areas, near ponds or by the edge of wooded sites.

Betula maximowicziana

45'

Monarch Birch

A fast growing birch, wide spreading and open in habit, with trunk and main branches white. The catkins are long and the leaves largest of all white birches, up to 6 inches long. Borers have not been a problem to date. Use as a specimen tree or for accent in the landscape.

Betula nigra

50'

River Birch

The attractive exfoliating cinnamon colored bark of the main trunk makes this tree an outstanding specimen. The dark green foliage turns bright yellow in autumn. Catkins are effective in fall, winter, and spring. This species is tolerant of very wet soils. Borers have not been a serious pest. Plant for bark character in moist sites as a single or multi-stemmed specimen.

Betula papyrifera

50'

Canoe Birch

Also known as Paper Birch, this rapid growing tree has a pyramidal shape with exfoliating white bark. The dark green leaves 1.5-4 inches long are rounded at the base and turn yellow in fall. This birch grows best in a cooler climate and better specimens are found in northern Ohio than the southern part of the state. Susceptible to Birch Leaf Miner and to some extent, the Bronze Birch Borer. Locate as a specimen, lawn tree, in a park or public area, in clump or single stem form.

Betula pendula

50'

European White Birch

Sold as *B. alba* or *B. verrucosa* in the past, this fast growing species is pendulous, oval in habit with exfoliating white bark. The triangular shaped leaves turn from green to yellow in autumn. Adapted to most soils throughout the state, but very susceptible to the Bronze Birch Borer, which attacks the upper portion of the trunk and shortens its expected life. This very popular tree is planted in lawns, near homes, patios, and terraces and often with garden lighting. However, the borer will cause extensive damage and the tree is not recommended for extensive use.

Cultivars

B. p. 'Fastigiata'Pyramidal European White Birch. Pyramidal shape, columnar when young and dense.

B. p. 'Gracilis'Cutleaf European White Birch. Gracefully pendulous with deeply cut leaves.

B. p. 'Purple Splendor'Purple Splendor European White Birch.

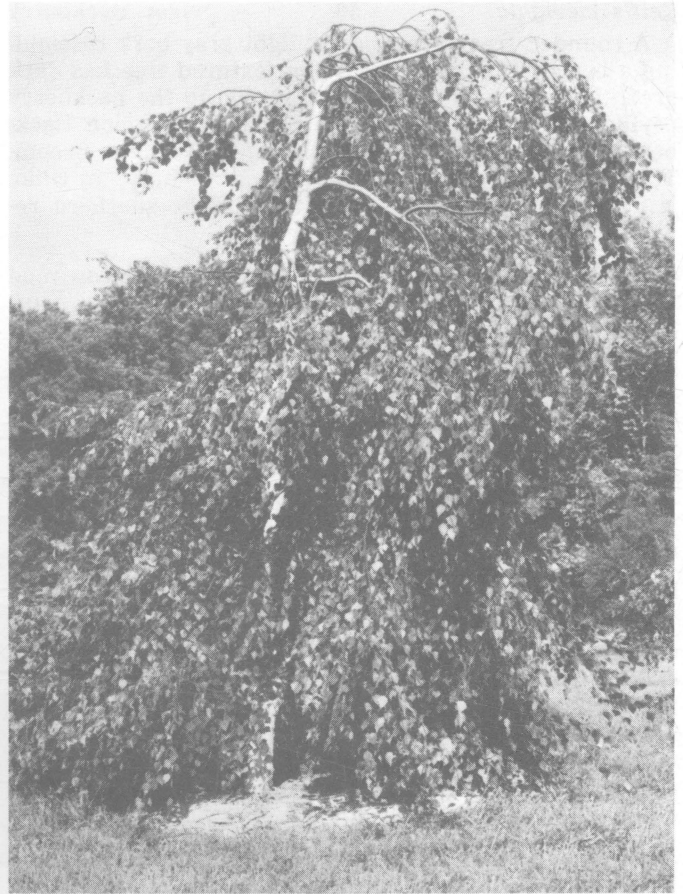
Purplish-colored leaves.

B. p. 'Tristis'Slender European White Birch. A tall but narrow tree with pendulous branches.

B. p. 'Youngi'Young's European White Birch. A small cultivar with an irregular weeping habit.



European White Birch



Young's European White Birch

Other Species

B. populifolia 40-50' **Gray Birch.**
Native to northeastern United States, this tree differs from *B. pendula* with horizontal black triangular patches on its lower trunk and larger leaves. Subject to similar insect problems of previously mentioned cultivars and therefore is not highly recommended.

Carpinus caroliniana 30-35' **American Hornbeam**

This bushy tree with a loose and open habit is often called Ironwood, Muscledwood or Blue Beech. The striking feature is the smooth, gray, muscle-like bark on the trunk and older branches. The dull, blue-green foliage turns orange and scarlet in autumn and the interesting clustered fruit is hop-like. This Hornbeam is native along borders of water and near swamps, but often it is not readily available in nurseries due to transplanting difficulties. Plant in lawns, as a street tree, in parks, or near bodies of water.

Castanea mollissima 45-55' **Chinese Chestnut**

The Chinese Chestnut is rounded in habit with lustrous dark green leaves, attractive yellowish staminate flowers in mid-June and yellow to bronze autumn foliage. This species is somewhat resistant to the Chestnut blight and produces edible nuts, if two or more trees are planted in close proximity to each other. Plant in well drained soil in areas where the fruits will not become troublesome if not harvested.



Chinese Chestnut

Celtis laevigata 50' **Sugar Hackberry**

A rounded tree with smooth, light gray bark resembling a beech. This medium to fine textured tree has dark green leaves which are not susceptible to the hackberry psyllid, which causes the galls found on common Hackberry. Sugar Hackberry is resistant to Witches Broom. This attractive tree, unfortunately not common in Ohio, is used along streets and in parks in the southern regions of the country.

Cladrastis lutea 35' **American Yellowwood**

Yellowwood is a slow growing, rounded tree, distinguished by 12-14 inch pendulous, white flowers in late May or early June. The compound, dark green foliage turns yellow in autumn. The bark is smooth, gray and pleasing in winter. This tree has no pests and is easily transplanted when young. It has a tendency to have narrow branch crotches and cabling or bracing may be required in larger specimens. A clean tree for lawn, park, or golf course, used particularly in alkaline soil areas.

Corylus colurna 50' **Turkish Hazel**

A broad pyramidal form with dark green leaves, changing to a yellow-purple in autumn. The staminate catkins are 2-4 inches long in March and the nuts are borne in a green husk. Adaptable to a wide range of conditions, pest free, and quite drought resistant. Plant where a formal character is desired, as a street tree, or other large area. Uncommon in nurseries due to propagation difficulties.

Eucommia ulmoides 35-40' **Hardy Rubber Tree**

This fast growing, broad but rounded tree, has smooth gray bark, outstanding dark, glossy, green foliage but no flowers or fruits of importance. During drought conditions, the foliage retains its dark green color. The tree is easy to transplant but is seldom in the nursery trade due to propagation difficulties. Plant as a lawn tree, in large areas, golf courses, or in dry sites.

Fraxinus ornus 40-45' **Flowering Ash**

This ash is round in habit and differs from other ashes with its abundant, fragrant, white flower clusters in mid- to late-May. The foliage is a good dark, somewhat glossy green. This tree is a favorite in Europe and just recently has become available in this country. Use as a lawn or street tree, or as a specimen in the foreground of large evergreens.

Ostrya virginiana 30-35' **American Hophornbeam**

This slow growing, broad spreading, rounded tree is interesting in winter with its shredding, plate-like bark. The bladder-like fruits in late summer and fall are unusual. The 3-5 inch long leaves are a dull yellow green turning reddish in autumn. Adaptable to a wide range of soils, pest free, but difficult to transplant and, because of this, is not readily available. Use as a street tree, in lawns, or in large areas.

Phellodendron amurense 30-35' **Amur Corktree**

A coarse textured, broad spreading oval tree with rough, corky bark and dark green, compound leaves, which turn yellow in autumn and drop early. The clusters of black, berry-like fruits on the female trees remain all winter. It's easily grown in most any soil, with

no serious pests. A fine tree for large areas, parks, and golf courses, but must have sufficient space to spread.

Prunus sargentii 35-40' **Sargent Cherry**

This upright, rounded tree is one of the best ornamental cherries for Ohio. The flowers in late April are single, deep pink, fading to light pink. The brown bark is typical cherry-like with large horizontal lenticels. The foliage is bronze in spring, turning green in summer, then red in fall. This hardy cherry is adaptable to most soil conditions. Plant as a specimen, in parks, or in a tree lawn.

Cultivar

P. s. 'Columnaris' 25' **Columnar Sargent Cherry**
Only 8' wide, this narrow tree is excellent for streets.

Prunus yedoensis 40' **Yoshino Cherry**

Yoshino Cherry is a rapid grower, tends to be flat, open and somewhat short lived, like many cherries. It is the species which predominates the planting in the tidal basin in Washington, D. C. The flowers in April are single, white to pink and slightly fragrant. Plant in well drained soils. The landscape value is at flowering; therefore, plant as a specimen, near large buildings, or in a tree lawn.

Cultivar

P. y. 'Akebono' 35-40' **Akebono Cherry**
Deep pink buds opening to white, single blooms; sold commonly as Daybreak Cherry.

Pyrus calleryana 45' **Bradford Callery Pear**

A broad, pyramidal tree with fine textured, glossy, dark green leaves which turn purple, yellow, or reddish in autumn. The outstanding display of flowers from mid-April to early May is followed by very small (1/2 inch) fruits in September, which do not become a maintenance problem. This pear will grow well in average soil conditions. With excellent form, foliage and flowers, this tree and other cultivars should be planted on streets, in tree lawns, in malls or around business establishments.

Cultivars

P. c. 'Aristocrat' PP 3193. . . . Aristocrat Callery Pear.
Has up curved branching and glossy, cupped foliage with long petioles.

P. c. 'Chanticleer' Chanticleer Callery Pear.
Cone shape, quite formal and maturing at 30'.

P. c. 'Fauriei' Dwarf Callery Pear.
The smallest of the ornamental pears reaching 15'.

P. c. 'Rancho' Rancho Callery Pear.
The fall color occurs approximately 10 days earlier than others.

P. c. 'Select' Improved Callery Pear.
Evenly branched, cone-shaped, blooms well at early age, reaches 30'.

Quercus acutissima 35-40' **Sawtooth Oak**

Relatively unknown, this broad spreading, round tree is quite different from most oaks. The foliage is 3-7 inches long, quite narrow with bristle-like margins. The fruit is unusual in that the cup encloses about two-thirds of the acorn with spreading, recurving scales. No serious pests bother Sawtooth Oak, which grows well in most

soils. Since it's as broad as high, this oak is an excellent tree for shade as a specimen or for park use.

Quercus phellos 40-50' Willow Oak

This fine textured conical tree has narrow willow-like leaves ranging from 1/4-1 inch wide up to 5 inches long. The light green foliage turns yellow in autumn. Transplants well into average soils with good drainage and has few pest problems. Plant in the lawn or where the fine texture of both the foliage and twigs is desired. Generally limited to central and southern Ohio.

Sassafras albidum 40' Sassafras

A native tree to acid soil regions, Sassafras is irregular in habit. The twigs are green, and the foliage bright green in summer to orange-red in autumn. Interestingly, several shapes of leaves can be observed from lobed to mitten-shaped to simple. Japanese Beetle is the major pest of this tree, which does best in the acid soils of eastern Ohio. It is difficult to transplant in larger sizes and for this reason is not always available in the trade. Plant in naturalized areas, in parks, or other large areas.

Tilia cordata 40-50' Littleleaf Linden

This small leaved, fine textured, pyramidal to oval shaped tree is used extensively in landscaping. The heart shaped, dark green leaves turn yellow in autumn. The fragrant, cream colored flowers in late June are followed by small nut-like fruits attached to a wing. Plant in well drained soils and fertilize regularly for maximum growth. Spray to control aphids and to avoid sooty mold growth on lower leaves. The excellent symmetrical habit lends itself to use as a shade tree, for lawns, streets, golf courses, commercial sites or large areas.

Cultivars

T. c. 'Chancellor' PP 2712.....Chancellor Littleleaf Linden.

Straight trunk, compact, narrow upright habit.

T. c. 'Glenleven'.....Glenleven Littleleaf Linden. Larger leaves, straight trunk and faster growth rate than the species.

T. c. 'Greenspire' PP 2086.....Greenspire Littleleaf Linden.

Narrow, oval form, straight trunk with radially arranged branches.

T. c. 'June Bride'.....June Bride Littleleaf Linden. Small glossy leaves, pyramidal habit with abundant blooms in late June.

T. c. XP110.....XP110 Littleleaf Linden. Characterized by acute branch angles, narrow conical form and uniform habit of growth.

Tilia euchlora 50' Crimean Linden

An oval shaped tree with somewhat pendulous branches. The heart-shaped lustrous dark green leaves which turn yellow in fall vary from 2-4 inches in length. The twigs are green and the cream colored flowers are fragrant. Plant in average soils as a lawn tree, along streets, in parks, golf courses or in commercial plantings.

Cultivars and Other Species

T. e. 'Redmond'.....Redmond Crimean Linden. Dense, pyramidal habit of growth.



Chinese Elm

T. tomentosa.....Silver Linden. Foliage dark green above, white below, tree matures from 50-60'.

T. petiolaris.....Pendent Silver Linden. Drooping branches and foliage; leaves white beneath.

T. platyphyllos.....Bigleaf Linden. Maturing at 60-70' with spreading pyramidal form; a cutleaf form is sold as T. P. 'Lacinata'—Pyramidal Cutleaf Linden.

Ulmus parvifolia 35' Chinese Elm

This tree is rounded, broad spreading with attractive, exfoliating, mottled bark. Chinese Elm is unfortunately often confused with *Ulmus pumila* or Siberian Elm which is not recommended due to its brittleness and susceptibility to diseases. The fine textured foliage of Chinese Elm is relatively small, varying from 1/2-2 inches long, is lustrous and dark green, turning reddish in autumn. The flowers appear in the autumn rather than spring. Chinese Elm is somewhat resistant to Dutch Elm Disease. It is tolerant of most soil conditions. Since it's a slow growing, medium sized tree, it can be used as a street tree, lawn tree, near a patio, or in parking lot islands.

LARGE TREES— OVER 50 FEET IN HEIGHT

Acer nigrum 60' Black Maple

Rounded in form, this medium growing maple is similar to Sugar Maple but broader and oval in habit. It differs with darker bark color, and larger leaves with drooping margins which turn a golden brown in the fall. It has few pests or leaf scorch problems. When available in the trade, use in large areas, parks, golf courses, or as a substitute for Sugar Maple.

Acer saccharum 65-75' Sugar Maple

This upright, oval shaped tree has dark green leaves in summer, turning to yellow and a brilliant mixture of orange-red in autumn. Plant into well drained soil, since the tree is not tolerant of wet soils. The two problems encountered most frequently are verticillium wilt and more commonly, leaf scorch from dryness in mid- to late-summer. Plant in lawns, parks or where space permits as a street tree but not in downtown areas.

Cultivars

A. s. 'Columnare' Newton Sentry Sugar Maple.
A narrow upright 40' tree by 17' wide.

A. s. 'Globosum' Globe Sugar Maple.
A dense rounded form maturing at 10'.

A. s. 'Green Mountain' PP 2339 Green Mountain
Sugar Maple.

Oval in habit, uniform grower with thick waxy layer
surrounding the leaves; trees more resistant to leaf
scorch in summer.

A. s. 'Monumentale' . . . Temple's Upright Sugar Maple.
Slender, ascending form to 50'.

A. s. 'Sweet Shadow' Sweet Shadow Sugar Maple.
Dark green leaves with deeply cut lobes.

Acer saccharinum 75-80' Silver Maple

Silver Maple is a rapid growing, weak wooded, upright
oval maple which grows well under most conditions.
The bark is silver gray and the medium green foliage
is silvery underneath. Formerly extensively planted
along highways, these plantings have resulted in con-
stant maintenance problems. Silver Maple and its cul-
tivars are not recommended for general landscape use
and should be planted only in large open areas where
the limbs will not interfere with utility lines or struc-
tures and the roots will not invade septic systems, drain
fields, or side walks.

Cultivars

A. s. 'Beebe' Beebe Cutleaf Weeping
Silver Maple.

Cut leaf form with horizontal branching habit.

A. s. 'Pyramidal' Pyramidal Silver Maple.
Broad, pyramidal habit with superior foliage.

A. s. 'Wier' Wier Cutleaf Silver Maple.
Pendulous habit with deeply cut leaves.

Aesculus hippocastanum 55-60' Common
Horsechestnut

An oval shaped tree with 7 large palmately arranged,
dark green leaflets, each 4-10 inches long. The large
brown buds are sticky while the buds of the Buckeye
are not. The pyramidal clusters of white flowers 8-10
inches long in early to mid-May make this species more
effective than the Ohio Buckeye. The shiny, brown
nutlets are not ornamental. The horsechestnut is tolerant
of average soils but will exhibit some leaf scorch in the
late summer. Use in the landscape in large areas such
as on school grounds, parks, and arboretums.

Cultivar

A. h. 'Baumanni' Baumann Horsechestnut.
The attractive flowers are double white.

Aesculus octandra 50-55' Yellow Buckeye

This fast growing species of Buckeye is oval in shape,
with light gray bark and large tan non-sticky buds. The
five 4-6 inch leaflets are light green, turning orange-
brown in autumn. The leaves are stalked, resulting in a
somewhat pendulous character. Widely adaptable to most
sites with typical *Aesculus* leaf scorch symptoms in sum-
mer. Not readily available in the trade. Plant in large
areas and public areas such as parks.

Ailanthus altissima 50-60' Tree-Of-Heaven

A rapid growing, weak wooded tree with a broad open

form. The compound leaves may be 2 feet in length with
13-25 leaflets. The fruit pods of the female tree turn
reddish in late summer. It has long been considered a
weed tree, and is not recommended for landscape use.
Recently, interest has been shown for its use in sites
with poor soils and in urban situations due to its re-
sistance to heat, smoke, pollution and pests.

Fagus sylvatica 50-60' European Beech

This tree is formal, broadly oval, compact, with branch-
es to the ground. The bark is smooth and gray and the
many fine branches result in an excellent winter effect.
The leaves have wavy margins and are dark green until
they become bronze in late fall. This beech is usually
planted as a specimen, in public areas, or occasionally
as a hedge.

Cultivars

F. s. 'Asplenifolia' Fernleaf European Beech.
Deeply cut, fern-like leaf.

F. s. 'Atropunicea' Purple European Beech.
Purple leaf form.

F. s. 'Cuprea' Copper European Beech.
Young foliage, light reddish bronze.

F. s. 'Fastigiata' Dawyck European Beech.
An excellent fastigate tree.

F. s. 'Pendula' Weeping European Beech.
A weeping form with green foliage.

F. s. 'Riversi' Rivers European Beech.
Densely compact, young foliage reddish, turning purple.

F. s. 'Rohanii' Rohan European Beech.
A cutleaf purple form.

F. s. 'Spaethiana' Spaeth European Beech.
Foliage small, deeply veined and dark purple all summer.

F. s. 'Tricolor' Tricolor European Beech.
Leaves white and green with a pink margin.

F. s. 'Zlatia' Golden European Beech.
Slow growing, upright with new leaves golden or yellow
becoming green in late summer.

Fraxinus americana 80' White Ash

White Ash has an upright oval habit with dark green,
compound leaves which turn purplish-red in autumn.
This large native tree is tolerant of most soil conditions,
including moist areas, but is susceptible to borers. White
ash and its cultivars are used in landscaping parks and
other large areas.

Cultivars

F. a. 'Autumn Purple' Autumn Purple White Ash.
Valued for deep purple autumn color and seedless char-
acter.

F. a. 'Rosehill' PP 2678 Rosehill White Ash.
A seedless cultivar with bronze-red fall coloring.

Fraxinus excelsior 80' European Ash

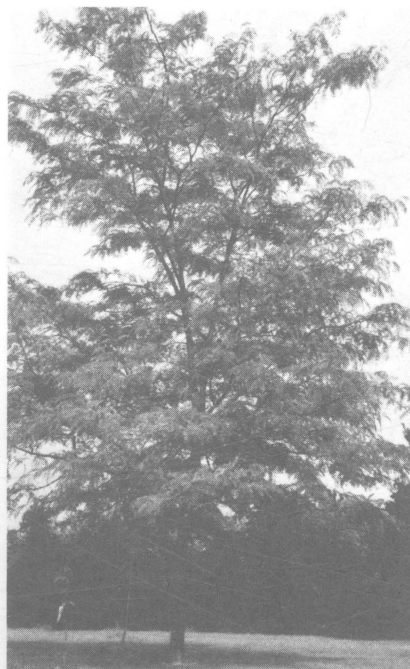
This fast growing species with rounded form has black
tomentose buds and small green leaflets that do not
change color in autumn. Since the tree is large, plant
where ample space permits. The cultivars offer more uses
in the landscape, since they are lower growing.

Cultivars

F. e. 'Aurea' Gold Cloud Ash.
Golden-yellow fall color and yellow twigs.



Ginkgo



Majestic Honeylocust

F. e. 'Hessi'.....Hesse European Ash.
Differs from other ashes with a simple leaf; matures at 60'.

F. e. 'Nana'.....Globe European Ash.
A globe form grafted 6-8'.

F. e. 'Pendula'.....Weeping European Ash.
Weeping form popular in European gardens.

Fraxinus pennsylvanica
subintegerrima 55'

Green Ash

A rapid growing, dense, oval shaped tree characterized by shiny, dark green leaves that turn yellow in autumn. This species is native and quite tolerant of drought conditions. It can be planted in large areas, in dry sites or tree lawns; however, cultivars are usually used.

Cultivars

F. p. s. 'Marshall's Seedless'.....Marshall's Seedless
Green Ash.

Similar to Green Ash, but without seeds and usually selected over the species.

F. p. s. 'Summit'.....Summit Green Ash.
Similar to Green Ash, with upright habit, strong central leader and seeds.

Other Species

Fraxinus holotrica 'Moraine'.....Moraine Ash.
A rapid growing, but small 30-40' tree with fine texture and seedless.

Fraxinus quadrangulata.....Blue Ash.
A tall, 60' tree with winged bark native to alkaline soils; a compact symmetrical cultivar 'Kimberly Blue' is in the trade.

Ginkgo biloba 70'

Ginkgo

Ginkgo, or Maidenhair Tree, is one of the oldest known deciduous tree species in the world. The picturesque, irregular habit of growth is most interesting as are

the bright green, fan shaped leaves. Since the male and female flowers are borne on separate trees, plant only the male. The female trees bear plum-like fruits, which when mature have a vile odor. This pest free, durable tree should be planted along streets or in public places, avoiding city conditions due to sensitivity to air pollution.

Cultivars

G. b. 'Autumn Gold'.....Autumn Gold Ginkgo.
Male, compact, uniform habit of growth to 45'.

G. b. 'Fastigiata'.....Sentry Ginkgo.
Columnar male form.

G. b. 'Fairmont'.....Fairmont Ginkgo.
A male with pyramidal, ascending branches.

G. b. 'Lakeview'.....Lakeview Ginkgo.
Male, compact conical form to 50'.

G. b. 'Mayfield'.....Mayfield Ginkgo.
Male, extremely narrow to 30'.

G. b. 'Pendula'.....Weeping Ginkgo.
Male with a weeping habit of growth.

G. b. 'Sentry' PP 2726.....Sentry Ginkgo.
Male, columnar habit to 70', dark green foliage.

Gleditsia
triacanthos inermis 35-65'

Thornless Honeylocust

This fine textured, fast growing tree without thorns is very popular with landscape architects. The medium to dark green leaves turn yellow in autumn and do not pose a raking problem when they fall due to their small size. This tree is tolerant of city conditions, most soils, and is readily transplanted. Insects can be a problem and spraying may be needed for one or more of the following: pod gall midge, mites, leaf hoppers, plant bugs and, in late summer, the mimosa webworm. Used as a street tree, lawn tree, or for filtered shade near the home. Cultivars should be selected due to their thornless and seedless characters.



European Larch



American Sweetgum

Cultivars

G. t. i. 'Imperial' PP 1605.....Imperial Honeylocust.
Spreading, graceful cultivar to 35'.

G. t. i. 'Majestic' PP 1534.....Majestic Honeylocust.
Upright spreading to 65' with dark green foliage.

G. t. i. 'Moraine'.....Moraine Honeylocust.
A broad-spreading form to 50'.

G. t. i. 'Shademaster' PP 1515.....Shademaster
Honeylocust.

Symmetrical form with ascending branches.

G. t. i. 'Skyline' PP 1619.....Skyline Honeylocust.
Pyramidal cultivar to 45'.

G. t. i. 'Sunburst' PP 1313.....Sunburst Honeylocust.
Maturing at 35' with yellow foliage at terminals of all
branches.

Gymnocladus
dioicus

65-75'

Kentucky
Coffeetree

This fast growing, upright, open tree has dark green, compound leaves and long 6-10 inch brown pods in autumn. Although somewhat difficult to transplant, this tree is very adaptable to most soils and tolerant of drought and city conditions. A tree with coarse character for public areas, parks, and large areas.

Larix decidua

70-75'

European Larch

Resembling an evergreen, this slow growing deciduous tree with needle-like foliage is pyramidal in habit with a central leader. The light green, fine textured foliage turns yellow in autumn. It's readily transplanted and thrives in most soils, including moist sites. An excellent tree for arboretum, park, public, and large area use.

Other Species

L. kaempferi.....Japanese Larch.
Formerly L. Leptolepis, this wide spreading tree has slightly longer needles than the European Larch.

Liquidambar
styraciflua

60-75'

American
Sweetgum

This is a very popular tree due to its attractive pyramidal form when young with glossy green, star shaped leaves which become yellow, purple or red in autumn. The corky ridges on the branches add an interesting feature in winter, along with the brown spiny ball-like capsule fruit. The fruits are often used in Christmas decorations. Transplant in spring in well drained fertile soils. No pests bother this species, which is used as a street, shade, or lawn tree. Cultivars should be selected for specific form and dependable orange to red fall color.

Cultivars and Other Species

L. s. 'Aurea'.....Gold Dust Sweet Gum.
Leaves striped and mottled yellow.

L. s. 'Burgundy'.....Burgundy Sweetgum.
Leaves purplish in autumn holding late.

L. s. 'Festival'.....Festival Sweetgum.
Narrow upright habit with pink and orange fall color.

L. s. 'Moraine'.....Moraine Sweetgum.
Uniform habit with red fall color.

L. s. 'Palo Alto'.....Palo Alto Sweetgum.
Uniform pyramidal habit with orange-red fall color.



Left, Baldcypress—Right, Dawn Redwood

L. s. 'Variegata' Golden Sweetgum.
Foliage speckled, spotted or streaked with gold turning pink and red in autumn.

Liriodendron tulipifera 75-80' Tuliptree

This fast growing, oval shaped tree is also known as Tulip Poplar. The bright green leaves turn yellow in autumn. The tulip shaped flowers are cream colored with an orange center but are seldom seen since they are borne on the upper portion of the tree. Leaf spot, aphids, and leaf hopper can all be controlled with pesticides. This native tree is best used in large areas.

Cultivar

L. t. 'Fastigiatum' Columnar Tuliptree.
A narrow upright tree to 35', uncommon in trade.

Metasequoia glyptostroboides 75' Dawn Redwood

This fast growing pyramidal tree, which existed 50 million years ago, resembles an evergreen with its needle type foliage. The light green foliage turns yellow-green prior to falling in autumn. Adaptable to wet soils. Plant as a specimen, in arboretums or public areas.

Nyssa sylvatica 75-80' Black Tupelo

A slow to medium growing tree with a central leader and stiff horizontal branches giving a pyramidal shape somewhat resembling Pin Oak. The dark, glossy green foliage turns a striking red in autumn. Transplant in smaller sizes into acid soils for best growth. Plant in the lawn, in parks, or along streets away from utility wires.

Platanus hybrida (acerifolia) 60' London Planetree

This fast growing, upright spreading tree has become quite popular due to its exfoliating olive green to white bark. The leaves are large, bright green with no significant fall color. The brown, ball shaped fruits are often borne two to a cluster. Adapted to a wide range of soils, it withstands most city conditions as well as severe pruning. The major pest is anthracnose, while bleeding canker and bark splitting are sometimes noted. Used as a street tree, in city malls, and in large areas such as parks.

Cultivar

P. h. 'Bloodgood' Bloodgood London Planetree.
Leaves more tomentose and resistant to anthracnose.

Quercus coccinea 70-75' Scarlet Oak

This pyramidal shaped tree with a central leader bears dark, glossy green leaves which become scarlet in autumn. The leaves resemble those of the Pin Oak but the plant is less susceptible to iron chlorosis. Difficulty of transplanting limits its availability. Scarlet Oak makes an excellent golf course, lawn, street, or specimen tree.

Quercus imbricaria 50-60' Shingle Oak

Shingle Oak is pyramidal when young, becoming round-topped at maturity. The leathery, dark green leaves turn brown and hold through winter. No serious pests bother this oak, which is readily transplanted and tolerant of average soil and city conditions. This fast growing oak should be used more in lawns, parks, industrial grounds, golf courses, and along streets.

Quercus palustris 60-75' Pin Oak

The fine texture, pyramidal shape and pendulous lower branches make this tree a favorite of many. The glossy, dark green foliage has deep sinuses, a wedge shaped base with axillary tufts of hair on the underside. In autumn, the foliage turns to an orange-scarlet. This species is readily transplanted and tolerant of most soils; however, it should not be planted in wet, alkaline soils due to severe iron chlorosis problems. Plant in the lawn, golf course, commercial sites, and parks.

Cultivar

Q. p. 'Sovereign' P.P. 2662 Sovereign Pin Oak
All branches are horizontal or ascending, thus allowing its use as a street tree.

Quercus rubra maxima 50-60' Eastern Red Oak

A fairly fast growing species which is rounded at maturity. The dark, dull green leaves vary from 5-9 inches in length with bristle pointed teeth on the lobes. The fall color is a dull red. No serious pests attack this oak, which is easily transplanted and adaptable to city conditions. Plant in the lawn, park, golf course, commercial site, or downtown, but not in polluted situations.

Quercus shumardi 70'+ Shumard Oak

Occasionally listed as Texas Oak, this species has the same characteristics as Scarlet Oak but is more easily transplanted. The dark, glossy green foliage with bright red autumn color has sinuses that almost close and may have axillary tufts of hair on the underside. No serious pests, adaptable to most soils, and used in the lawn, parks, and along streets.

Cultivar

Q. s. 'Schneck' Schneck Oak.
Similar to species but cup encloses 1/3 of acorn, while in the species much less is enclosed.

Other Species

Q. bicolor Swamp White Oak.
Narrow, round, 40-50', coarse texture leaves, white underneath.

Q. macrocarpa Burr Oak.
Upright, irregular to 100', coarse texture, large leaves.



English Oak

Plant for filtered shade, on streets, in the lawn, or in city sites.

Cultivar

S. j. 'Regent' PP 2338.....Regent Japanese Pagodatree.

Oval, faster growing and more resistant to leaf hoppers than the species.

Taxodium distichum 50-60' Common Baldcypress

Scaly bark, light green, needle-like foliage which turns dull, orange brown in autumn, characterize this pyramidal shaped tree. Although Baldcypress will grow in dry sites, it's native in swampy soils and will form knees in wet areas. Use this narrow, tall, formal tree in moist sites, in parks or other large areas.

Cultivar

T. d. 'Shawnee Brave' PP 3551.....Shawnee Brave Bald Cypress.

Selected for its narrow, pyramidal growth habit.

Ulmus carpinifolia

Christine

'Christine Buisman'

60'

Buisman Elm

The habit is round to broadly pyramidal with dark, glossy green foliage. Resistant to both Dutch Elm Disease and Phloem Necrosis. Plant in large areas, parks, or as a replacement for the American Elm.

Other Species

U. americana 'Augustine'...Augustine American Elm. Fast growing columnar form.

U. 'Groenvelde'.....Groenvelde Elm. From Holland, resistant to the Dutch Elm Disease; uncommon in trade.

Zelkova serrata

60'

Japanese Zelkova

Used as a substitute for the elm because it is vase shaped and rounded in habit. The bark is cherry-like and the leaves, 2-5 inches in length, turn yellow to orange in autumn. Nectria canker is the most serious disease pest. This attractive tree should be used in lawns, parks, large areas and where space permits as a street tree.

Cultivars

Z. s. 'Parkview'.....Parkview Zelkova. Definite elm-like form.

Z. s. 'Village Green' PP 2337....Village Green Japanese Zelkova.

A hardier form with a straight trunk and rusty red fall color.



Christine Buisman Elm

Q. muhlenbergi.....Chinkapin Oak (Yellow Chestnut Oak).

Upright, oval to 50', coarsely toothed leaves 4-7 inches long, withstands moist, alkaline soils.

Q. robur.....English Oak.

A broad, dense rounded tree to 35', foliage bluish-green with rounded lobes.

Q. robur 'Fastigiata'.....Upright English Oak.

Columnar to 35', twigs greenish, considered among the best narrow-upright trees.

Q. velutina.....Black Oak.

Upright, rounded to 60' or more with 5-6 inch dark, glossy green foliage becoming dull red to dark orange in fall.

Salix

elegantissima

60-65'

Thurlo
Weeping Willow

A fast growing, weeping tree with fine texture from both twigs and foliage. The bright green foliage appears early in spring, turns yellow, and holds late into autumn. Weeping Willow grows in most soils but thrives in wet sites. Pests include aphids and willow leaf beetle. Since willows are fast growing and weak, they will break up in storms and should not be used extensively in the landscape. Plant near ponds or bodies of water. Avoid use near sidewalks, storm sewers, septic systems, leach beds, or any open pipe where there is water.

Other Species

S. babylonica.....Babylon Weeping Willow. Green stems, not reliably hardy.

S. blanda.....Wisconsin Weeping Willow. Green stems, hardy.

S. niobe.....Niobe Weeping Willow. Orange-yellow stems.

Sophora

japonica

50-55'

Japanese
Pagodatree

The dark green, shiny, compound foliage holds late into fall on this upright, spreading, and rounded tree. The twigs are dark green year-round. The attractive flowers are creamy white in loose panicles, blooming in late July. The green pods may remain attached all winter. Sophora is tolerant of city conditions and dry sites but is difficult to transplant and susceptible to leaf hoppers.

EVERGREEN TREES

SMALL TREES— LESS THAN 30 FEET IN HEIGHT

Chamaecyparis Threadleaf Sawara
pisifera filifera 20' False Cypress

A small tree of broad conical habit, usually broader than high. Branches spreading with long, green drooping, thread-like young branches. Has greatest landscape value when young, as older plants become loose and open. The interesting foliage and habit suggest its use near the home, as a specimen, or in an oriental garden.

Juniperus chinensis 25' Chinese Juniper

Native to China and Japan, this species has lighter green foliage and larger fruits than *J. virginiana*. The cultivars listed below are valued because they grow well in hot, dry sites, tolerate heavy pruning and thrive in most soil conditions. The major pest problems are various rust diseases and phomopsis twig blight. Upright Junipers should be used for border plantings, screens, hedges, and windbreaks.

Cultivars

J. c. 'Ames'.....Ames Chinese Juniper.
A slow growing, pyramidal plant with steel blue foliage.

J. c. 'Columnaris Hetzi'.....Het'z Columnar Chinese Juniper.

An excellent dense, columnar form with green foliage.

J. c. 'Iowa'.....Iowa Chinese Juniper.
Irregular upright habit to 10' with bluish foliage.

J. c. 'Keteleeri'.....Keteleer Chinese Juniper.
An outstanding pyramidal tree with dark green foliage and $\frac{3}{8}$ inch fruit.

J. c. 'Mountbattan'.....Mountbattan Chinese Juniper.
Compact, pyramid shape to 12', with silver, green foliage.

J. c. 'Torulosa'.....Hollywood Chinese Juniper.
A narrow, picturesque habit to 15' with bright green, tufted foliage.

Juniperus scopulorum Blue Haven
'Blue Haven' 12' Rocky Mountain Juniper

The outstanding feature of this open, pyramidal shaped Juniper is the sky blue color of the foliage. The blue fruits are borne annually. Use near buildings which contrast well with blue.

Juniperus virginiana 25-30' Eastern Red Cedar

The female plant of this densely pyramidal, often columnar shaped tree has $\frac{1}{4}$ inch bluish berries which ripen the first season. This plant, which tolerates dry, poor, gravelly soils, is native to the eastern half of the United States. The cultivars should be planted for screen, hedge, border, windbreak, or background uses.

Cultivars

J. v. 'Burki'.....Burk Eastern Red Cedar.
Narrow pyramidal habit with steel blue foliage becoming purple in winter.

J. v. 'Canaerti'.....Canaert Eastern Red Cedar.
Pyramidal form with good dark green foliage and profuse bluish fruit; irregular habit adds interesting character.

J. v. glauca.....Silver Eastern Red Cedar.
Narrow columnar tree, reaching 15' with silvery blue foliage in summer, turning to silvery gray in autumn.

J. v. 'Hillspire'.....Hillspire Eastern Red Cedar.
Dense, columnar habit with bright green summer foliage.

J. v. 'Manhattan'.....Manhattan Eastern Red Cedar.
Compact pyramidal plant with bluish green foliage.

J. v. pyramidalis 'Dundee'.....Dundee Pyramidal Eastern Red Cedar.

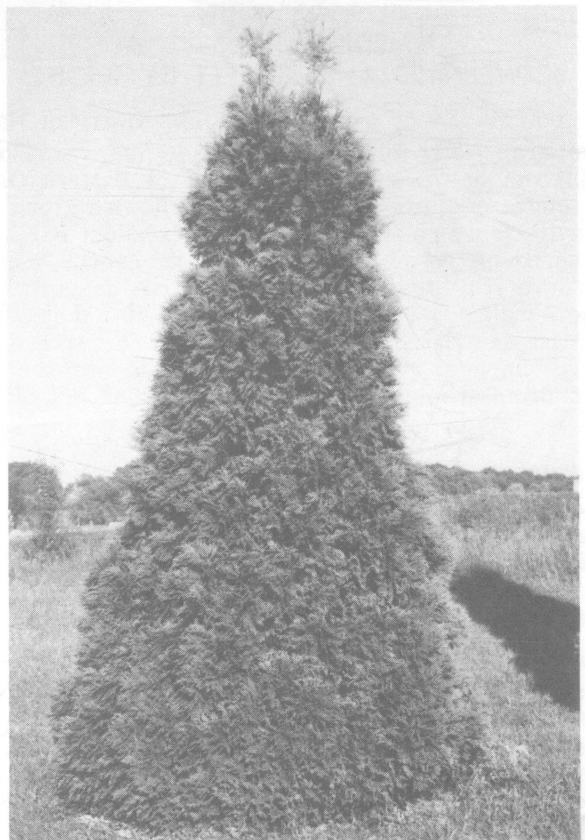
Formerly known as *J. v. pyramidiformis*, this has a pyramidal habit and turns a purple green in winter.

Pinus aristata 8-45' Bristlecone Pine

Known to be 4,000 years old in southwestern United States, this irregular growing tree will attain a height of 45 feet; however, in Ohio it's a dwarf tree of 8-12 feet. It's very picturesque with short bluish green needles bunched closely together, usually covered with white spots of resin. Extremely hardy but requires well drained soil. Used in rock gardens, as a specimen, or for bonsai.

Sciadopitys verticillata 25' Umbrella Pine

A slow growing, densely pyramidal tree with 3-5 inch, dark green needles arranged in whorls about the twigs similar to umbrella ribs, thus, its common name. There are no serious pests, but it should be planted in well drained soils for best growth. The needles remain on the tree up to three years, lower branches retain foliage well, thus making an excellent specimen lawn tree. This novel tree is not readily available in the trade due to propagation difficulties.



American Arborvitae

Thuja occidentalis 30' American Arborvitae

A columnar tree with several globose cultivars commonly seen planted in foundation plantings of many homes. They are planted extensively because they are more rapid in growth, thus less expensive to produce than the more desirable *Taxus* and *Juniper*. The foliage is flat, scale-like with most of the cultivars turning an undesirable yellow or brownish green color in winter. 'Techny' and 'Nigra' are the cultivars which retain the best green color all winter. Arborvitae will tolerate heavy, moist soils, and a slight amount of shade. Spider mite and Arborvitae leaf miner are the most troublesome pests, with bagworm an occasional problem. Use in the landscape for screens, hedges, windbreaks or accent plants. They have been over-used as foundation plants.

Species and Cultivars

T. o. 'Nigra'.....Dark Green Eastern Arborvitae. One of the better selections which retains green color in winter.

T. o. 'Pyramidalis'.....Pyramidal Eastern Arborvitae. A dense, pyramidal cultivar which is being replaced by 'Nigra' or 'Techny.'

T. o. 'Techny'.....Techny Eastern Arborvitae. Holds its dark green color better than other cultivars and an excellent selection for screen or hedge purposes.

T. orientalis.....Oriental Arborvitae. A species with several yellow foliaged cultivars; the name has been changed from *Thuja orientalis* to *Platycladus orientalis*.

MEDIUM TREES— BETWEEN 30 AND 50 FEET IN HEIGHT

Ilex opaca 30' American Holly

American Holly tolerates light shade, but grows best in full sun in the well drained soils of Eastern Ohio. The foliage is dull green above and yellowish green below with spines on the leaf margins. Excellent red fruit are borne on current years growth of female plants. To insure fruit set, plant one male tree or graft one or more male or pollen bearing branches onto the female tree. Use as a large shrub or small tree for screening, as a specimen, or close enough to the residence to enjoy the fruit in winter but out of the way of pedestrian traffic.

Cultivars

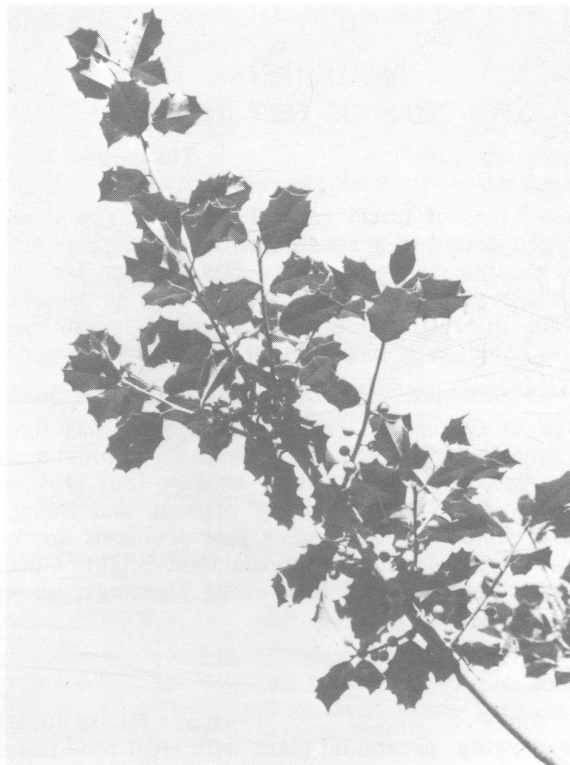
Over 300 named cultivars exist; however, the following are among the better selections:

Female—'Bountiful,' 'Cardinal,' 'Merry Christmas,' 'Mrs. Santa,' and 'Old Heavyberry.'

Male—'Santa Claus.'

Magnolia grandiflora 50' Southern Magnolia

This very dense, pyramidal tree is semi-evergreen some years in central Ohio; however, it would be more fully evergreen in southern regions of the state. The tree is most attractive in late May and early summer with its huge 8 inch flowers, set off by large, dark, shiny green leaves, 5-8 inches long. Plant into well drained soils. Use in protected sites, in parks, or other large areas, but expect browning of the foliage during severe winters.



American Holly

Pinus bungeana 45' Lacebark Pine

Rounded to pyramidal in form, this 3 needled, dark green pine has characteristic exfoliating gray-green bark exposing whitish inner bark. It is slow growing, open in habit, often multiple stemmed, and holds needles up to 5 years. Use as a specimen plant in the home yard or commercial landscape.

Pinus cembra 40' Swiss Stone Pine

A slow growing, dense, narrow, pyramidal tree while young, becoming rounded at maturity. The needles, 5 to a bundle, are blue-green with a soft texture, holding for 3 years. Grows well in average, well drained soils without major pests. Ideal for use in confined spaces, and small properties due to its slow growth rate.

LARGE TREES— OVER 50 FEET IN HEIGHT

Abies concolor 70' White Fir

This pyramidal shaped tree is the best fir for landscape use in Ohio, because it's more tolerant to heat, drought and city conditions than other species. The needles are an attractive blue-green or gray-green color and 2 inches in length. Plant in parks, open areas, golf courses, and in city situations where space permits.

Chamaecyparis obtusa 75' Hinoki False Cypress

A slow growing, large tree of conical habit with foliage a deep, shining green in thick, horizontal-flattened sprays. Tolerant of most soils and relatively pest free. The cultivars are usually used in the landscape.



White Fir

Cultivar

C. o. 'Gracilis' Dwarf Hinoki False Cypress.
Maturing at 9' with dark green foliage and slightly pendulous tipped branches.

Picea abies 100' Norway Spruce

Young plants are upright in habit but with time the branches become horizontal or descending while the branchlets become pendulous, making a very graceful tree. The 6 inch cones are the largest of all the spruces. This fairly rapid grower is adaptable to most soil conditions, but thrives best in soils with ample moisture during summer. Norway Spruce are planted near large buildings, in parks, for golf courses, screening, background, windbreak, and specimen use.

Cultivar

P. a. 'Pendula' Virgata Norway Spruce.
Pendulous branches and branchlets.

Picea glauca 60' White Spruce

This pyramidal spruce with blue-green needles is quite heat and drought tolerant. This species is quite hardy and is planted in cold, exposed conditions and often used for windbreaks. It does not age well and has been over-used in the landscape.

Cultivars

P. g. conica Dwarf White Spruce.
Specimens 40 years old may be 10' tall but usually mature at 4-5' with a very symmetrical habit; susceptible to spider mite.

P. g. densata Black Hills Spruce.
Bluish foliage, slow growing to 20-25'.

Picea omorika 60' Serbian Spruce

The Serbian Spruce is a narrow, pyramidal tree with short ascending branches and pendant branchlets. The whitish underside of the glossy green needles are exposed and attractive when the branches move in the wind. Use as a specimen, on golf courses, in parks, and as a background plant in the landscape. This is one of the most attractive spruces and should be planted more extensively.

Picea pungens 70' Colorado Spruce

Grown from seed, this species varies in color from green to blue, but makes a dense, pyramidal shaped tree, particularly while young. The major pest is spruce gall aphid and on occasion, red spider mite. Colorado Spruce thrives in most Ohio soils and grows best in full sun. Landscape use of the blue foliage cultivars listed below is limited to those areas in the backyard where the color can be blended or as specimens.



White Spruce



Colorado Blue Spruce

Cultivars and Species

P. p. 'Argentea'.....Silver Colorado Spruce.
Silvery white foliage, sold in trade as Koster Blue Spruce.

P. p. *glauca*.....Blue Colorado Spruce.
Foliage bluish green.

P. p. 'Hoopsi'.....Hoops Blue Spruce.
Silver-blue foliage, slow growing.

P. p. 'Moerheimi'.....Moerheim Blue Spruce.
Blue foliage, dense, compact.

Pinus densiflora 50-60' **Japanese Red Pine**

A flat topped tree with horizontal branches and bluish-green foliage that turns yellow-green in winter. The bark of the trunk and older branches is orange-red and the needles, 2 in a bundle, are 3-5 inches long and retained for only two years. This species and the cultivar Tanyosho Pine are utilized primarily as landscape specimens.

Cultivar

P. d. 'Umbraculifera'.....Tanyosho Pine.
Multi-stemmed with umbrella-like form to 12'.

Pinus griffithii 80-90' **Himalayan Pine**

A fast growing, wide spreading tree to 40 feet or more, with long, drooping blue-green foliage, giving it a very graceful appearance. The needles are 5 to 7 inches long, 5 to a bundle, and the cones are 6-10 inches in length. This species, which thrives in well drained soil, is not common in the nursery trade. Occasionally damaged by low temperature in central Ohio. Use in the landscape when there is ample space; excellent for parks.

Pinus nigra 75' **Austrian Pine**

A picturesque, fast growing species with wide spreading branches, maturing with a flat top. The bark of older trees is typically marked with vertical gray lines. The stiff foliage, 4-7 inches long, 2 to a bundle, is dark green and resistant to salt spray. This species will grow in acid and alkaline soils, but is susceptible to Dipoldia twig blight. Use as a specimen, screen, windbreak, or background planting, and in large areas such as golf courses and parks.

Pinus resinosa 75' **Red Pine**

This important timber tree has a broad pyramidal form and dark green foliage. The 4-6 inch needles are 2 to a bundle, quite flexible, and snap when bent. They are brighter green than the needles of Austrian Pine. The bark of the trunk is reddish brown. The tree will grow in average to poor soils. Landscape use is similar to Austrian Pine.

Pinus strobus 90' **Eastern White Pine**

This fast growing pine is dense and pyramidal when young, becoming extremely picturesque when mature. At maturity, the tree will be somewhat open with missing branches here and there with a flat top. The delicate, soft green, graceful foliage with 5 needles per bundle make White Pine one of the best of the pines grown in Ohio. In autumn the three and sometimes two year needles drop. In poorly drained soils, along roadsides, and air polluted areas, the foliage will turn yellowish green. Easily transplanted and adaptable to shearing, this tree is used extensively, where space and soil conditions permit, as a background planting, a windbreak, screen, for golf courses, or in large commercial plantings.

Cultivars

P. s. 'Fastigiata'.....Pyramidal White Pine.
Columnar in habit, narrowly upright.

P. s. 'Pendula'.....Weeping White Pine.
A small picturesque tree with pendulous branches.

Pinus sylvestris 60' **Scotch Pine**

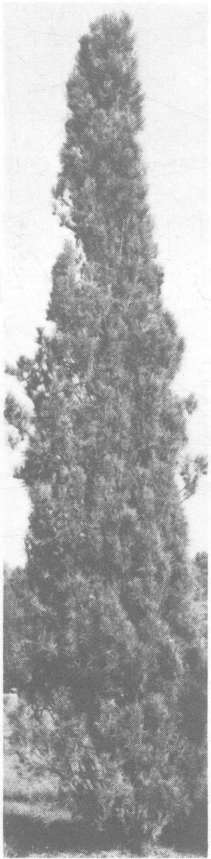
Dense, pyramidal as a young tree, Scotch Pine becomes round topped and irregular with age. The outstanding feature of Scotch Pine is the orange color of the trunk and older branches. The 2-3 inch, twisted, blue-green needles are stiff in appearance. This pine is adaptable to most soil conditions, including dry sites. Grown extensively for Christmas tree purposes, it can be used in situations similar to Austrian and Red Pine where a more open irregular effect is desired.

Cultivar

P. s. 'Fastigiata'.....Pyramidal Scotch Pine.
Columnar and the narrowest of any of the pines.

Pinus thunbergi 75' **Japanese Black Pine**

This is a dense, spreading pine with pendulous branches at maturity. The stiff needles are 4-5 inches long, 2 per bundle, and dark green. The tree grows best along shorelines and is quite resistant to wind and salt spray. In addition to its use along the shore, the Japanese have modified its growth through pruning to utilize it extensively as a bonsai plant.



Pyramidal
Scotch Pine



Douglas Fir

Pseudotsuga menziesii 150'

Douglas Fir

Douglas Fir is a densely pyramidal tree, characterized by horizontal branching, pendulous branchlets, unique pendulous cones, soft needles and long pointed terminal buds. This tree is relatively pest free and thrives in well drained soils. It's grown commercially as a Christmas tree and for lumber purposes but is used in the landscapes as a specimen, screen or hedge, and on golf courses and parks.

Tsuga canadensis

75'

Canada Hemlock

A fast growing, graceful, broad pyramidal tree, Canada Hemlock has long, slender, horizontal to drooping branches. Its short needles are marked with 2 white bands on the under surface. Hemlocks thrive in full sun or partial shade and in soils which are moist but adequately drained. They will not grow well in hot, dry, windy or city conditions. Move with a ball of soil in spring or fall. Trees should be maintained in their natural habit, although they can be heavily sheared to formal shapes or for use as hedges. Other landscape uses include wind-breaks, screens, and specimen plantings.

Species and Cultivars

T. c. pendula.....Sargent Hemlock.
A slow growing plant reaching 10', 2-3 times as broad as tall, moundlike, with pendulous branches.

T. caroliniana.....Carolina Hemlock.
Smaller than *T. canadensis*, forming a compact pyramidal tree to 50' with pendulous branches; uncommon in Ohio.

TREES TOLERANT OF ADVERSE ENVIRONMENTAL SITUATIONS

TREES TOLERANT OF PARTIAL SHADE

Few, if any, trees will thrive in heavily shaded conditions. Typically, most trees will not flower and fruit as well in shaded situations, and may become open, irregular or one sided. Pruning the large trees above to allow for greater sunlight penetration often improves the growth of smaller plants beneath. The following will withstand partial shade better than most other trees.

Amelanchier species.....Serviceberry
Carpinus species.....Hornbeam
Cercis canadensis.....Eastern Redbud
Cornus alternifolia.....Pagoda Dogwood
Cornus florida.....Flowering Dogwood
Cornus mas.....Corneliancherry Dogwood
Halesia species.....Silverbell
Ilex species.....Holly
Magnolia virginiana.....Sweetbay Magnolia
Styrax japonicum.....Japanese Snowbell
Thuja occidentalis.....American Arborvitae
Tsuga canadensis.....Canada Hemlock
Viburnum lentago.....Nannyberry Viburnum

TREES TOLERANT OF MOIST SOILS

Trees should not be planted in soils which hold excessive water or remain wet for extended periods. Surface and internal drainage should be provided in low areas. Planting above grade in raised beds increases survival rate to some degree. The following trees can withstand moist soil conditions better than most.

Acer rubrum.....Red Maple
Acer saccharinum.....Silver Maple
Alnus glutinosa.....European Alder
Amelanchier species.....Serviceberry
Betula nigra.....River Birch
Betula pendula.....European White Birch
Carpinus caroliniana.....American Hornbeam
Cercidiphyllum japonicum.....Katsuratree
Cercis canadensis.....Eastern Redbud
Cornus alternifolia.....Pagoda Dogwood
Cornus mas.....Corneliancherry Dogwood
Larix species.....Larch
Liquidambar styraciflua.....American Sweetgum
Magnolia virginiana.....Sweetbay Magnolia

Metasquoia glyptostroboides.....Dawn Redwood
Nyssa sylvatica.....Black Tupelo
Salix species.....Willow
Taxodium distichum.....Common Baldcypress
Thuja occidentalis.....American Arborvitae
Viburnum lentago.....Nannyberry Viburnum

TREES TOLERANT OF DRY SOILS

Sandy soils are often dry due to rapid drainage. This condition can be corrected prior to planting by incorporating ample amounts of organic matter such as peat, compost, leaf mold, etc. In addition, mulching sandy soils with an organic type mulch helps to prevent drying. The following trees will not withstand prolonged drought conditions but will survive in dry soils.

Acer buergerianum.....Trident Maple
Acer campestre.....Hedge Maple
Acer ginnala.....Amur Maple
Acer platanoides.....Norway Maple
Acer tataricum.....Tatarian Maple
Ailanthus altissima.....Tree-Of-Heaven
Betula populifolia.....Gray Birch
Corylus colurna.....Turkish Hazel
Elaeagnus angustifolia.....Russian Olive
Eucommia ulmoides.....Hardy Rubber Tree
Fraxinus pennsylvanica subintegerrima..Green Ash
Gymnocladus dioicus.....Kentucky Coffeetree
Gleditsia cultivars.....Honeylocust
Juniperus species.....Juniper
Koelreuteria paniculata....Panicled Goldenraintree
Pinus sylvestris.....Scotch Pine
Sassafras albidum.....Sassafras
Sophora japonica.....Japanese Pagodatree

TREES TOLERANT OF INSECTS AND DISEASE

Although few plants are entirely tolerant of insects and diseases, the trees mentioned below are tolerant of most pests under reasonably good growing conditions. Occasionally, trees will require spraying if a given insect or disease is particularly severe. Proper identification of the pest is important, prior to selecting a pesticide and spraying. Consult with a competent arborist, nurseryman, garden center operator or the local County Co-operative Extension Agent for assistance in pest identification and pesticide selection.

Ailanthus altissima.....Tree-Of-Heaven
Carpinus species.....Hornbeam
Cercidiphyllum japonicum.....Katsuratree
Cladrastis lutea.....American Yellowwood
Corylus colurna.....Turkish Hazel
Cornus alternifolia.....Pagoda Dogwood
Cornus mas.....Corneliancherry Dogwood
Eucommia ulmoides.....Hardy Rubber Tree
Ginkgo biloba.....Ginkgo
Halesia species.....Silverbell
Gymnocladus dioicus.....Kentucky Coffeetree
Koelreuteria paniculata....Panicled Goldenraintree
Liquidambar styraciflua.....American Sweetgum
Ostrya virginiana.....American Hophornbeam
Phellodendron amurense.....Amur Corktree
Sciadopitys verticillata.....Umbrella Pine

Styrax japonicum.....Japanese Snowbell
Viburnum species.....Viburnum

TREES TOLERANT OF CITY CONDITIONS

Included among the many problems encountered with growing trees in the city are excessive shade, insufficient moisture, wind currents, reflected light, poor compact soil, dust, smoke and various other pollutants. Although none of the following trees will readily withstand all of these adverse conditions, they have been found to grow fairly well in city conditions.

Acer campestre.....Hedge Maple
Acer platanoides.....Norway Maple
Ailanthus altissima.....Tree-Of-Heaven
Crataegus phaenopyrum....Washington Hawthorn
Crataegus monogyna.....Singleseed Hawthorn
Fraxinus americana.....White Ash
Fraxinus excelsior.....European Ash
Fraxinus pennsylvanica subintegerrima..Green Ash
Gymnocladus dioicus.....Kentucky Coffeetree
Gleditsia triacanthos cultivars.....Honeylocust
Koelreuteria paniculata....Panicled Goldenraintree
Malus species.....Flowering Crabapples
Phellodendron amurense.....Amur Corktree
Picea pungens.....Colorado Spruce
Platanus species.....Planetree
Quercus rubra maxima.....Eastern Red Oak
Quercus imbricaria.....Shingle Oak
Sophora japonica.....Japanese Pagodatree
Tilia species.....Linden



Honeylocust



Eastern Redbud

TREES OFTEN BANNED IN CITIES

For various reasons, certain trees are prohibited by local ordinance to be planted on city property or within a specified distance of public highways. Some trees such as Willows are weak-wooded and break easily during storms, creating safety and maintenance problems. Trees such as Silver Maple are shallow rooted and tend to crack and raise sidewalks or interfere with drainage systems. Some trees such as the edible apple or female Ginkgo have objectionable fruit. For these and many other reasons, including short life expectancy or susceptibility to pests, communities disallow the planting of certain trees. Among the trees most often encountered on these lists include ones below. The intent of this list is to suggest that maintenance problems are associated with these trees and planting should be based on that awareness.

Acer saccharinum.....Silver Maple
 **Acer negundo*.....Box-elder
Aesculus hippocastanum...Common Horsechestnut
Ailanthus altissima.....Tree-Of-Heaven



Weeping Willow

Betula (species and cultivars).....Birch
 **Catalpa* (species and cultivars).....Catalpa
Ginkgo biloba (female only).....Ginkgo
 **Malus pumila*.....Apple
 **Morus* (species).....Mulberry
 **Populus* (species).....Poplar
 **Robinia pseudoacacia*.....Black Locust
Salix (species).....Willow
Sorbus aucuparia.....European Mountain Ash
 **Ulmus pumila*.....Siberian Elm

* Descriptions of these trees are not included in the text as they are not considered among the better trees for general landscape use.

INTERESTING BUT RARE TREES

There are many outstanding trees which would be utilized to a greater extent in the landscape if they were more readily available in the nursery trade. Although several reasons exist for their unavailability, primarily problems are encountered in either propagation or transplanting. When these trees are listed, they should be planted on a limited basis. A number of these interesting but relatively rare trees are listed below.

Acer griseum.....Paperbark Maple
Aesculus octandra.....Yellow Buckeye
Betula maximowicziana.....Monarch Birch
Celtis laevigata.....Sugar Hackberry
Corylus colurna.....Turkish Hazel
Eucommia ulmoides.....Hardy Rubber Tree
Ostrya virginiana.....American Hophornbeam
Pinus aristata.....Bristlecone Pine
Pinus bungeana.....Lace-bark Pine
Quercus coccinea.....Scarlet Oak
Sassafras albidum.....Sassafras
Sciadopitys verticillata.....Umbrella Pine



Lacebark Pine

